

November 5, 1956

Automation Comes to Meet... p. 34

RAILWAY AGE

THE INDUSTRY'S WEEKLY NEWSMAGAZINE

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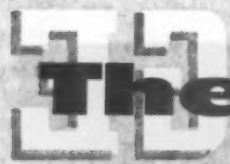


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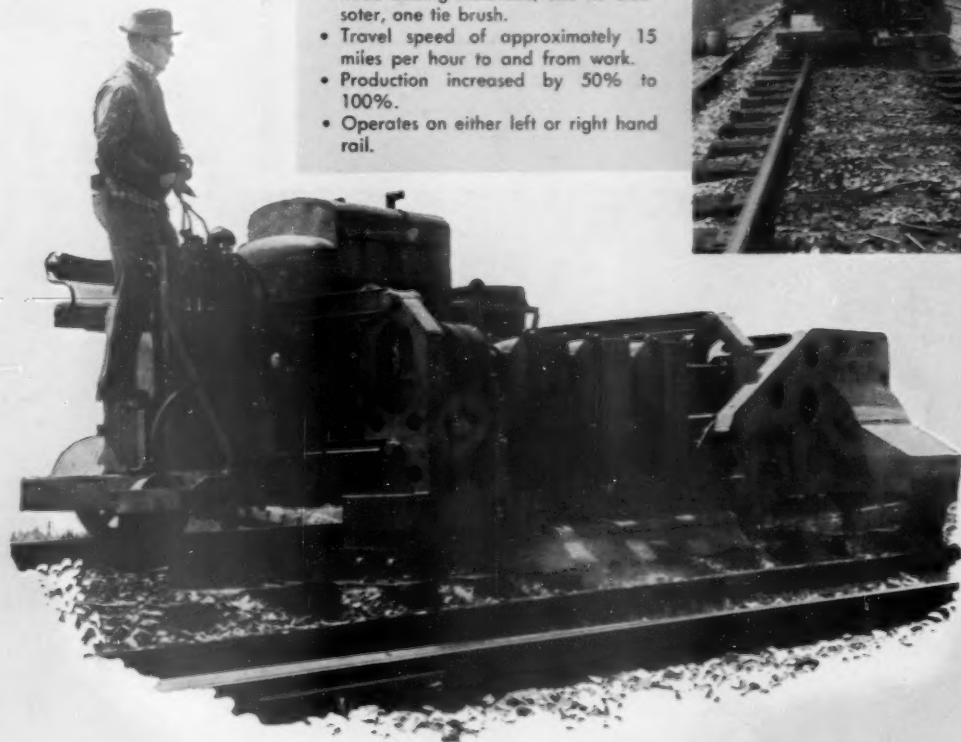
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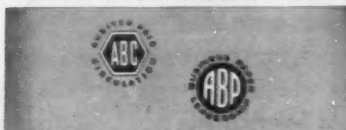
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Workbook of the Railways

Vol. 141, No. 20
November 5, 1956

CONTENTS and Week at a Glance

Railroads need more cooperation . . .

. . . and less pressure in their attempts to meet problems with which the industry is faced, George M. Harrison, Railway Clerks' president, told the annual convention of the Associated Traffic Clubs. . . . p.7

An extra \$600 million . . .

. . . in annual revenues is available to the railroads through expansion of piggyback operations and the time is ripe right now, according to t-o-f-c proponent Deodat Clejan. . . . p.8

FORUM: A job ahead . . .

. . . for the railroads is in the political field, regardless of the outcome of this week's election. The industry still has to arouse popular support for the changes in national transportation policies which it needs to achieve equal competitive opportunity. . . . p.33

Automation comes to Minot . . .

. . . and brings the Great Northern savings great enough to pay for its \$6.5-million investment in 10 years. . . . p.34

Mechanical reefers keep running . . .

. . . for FGE and associated companies because their policy is to change out parts in the temperature control system before they fail. . . . p.38

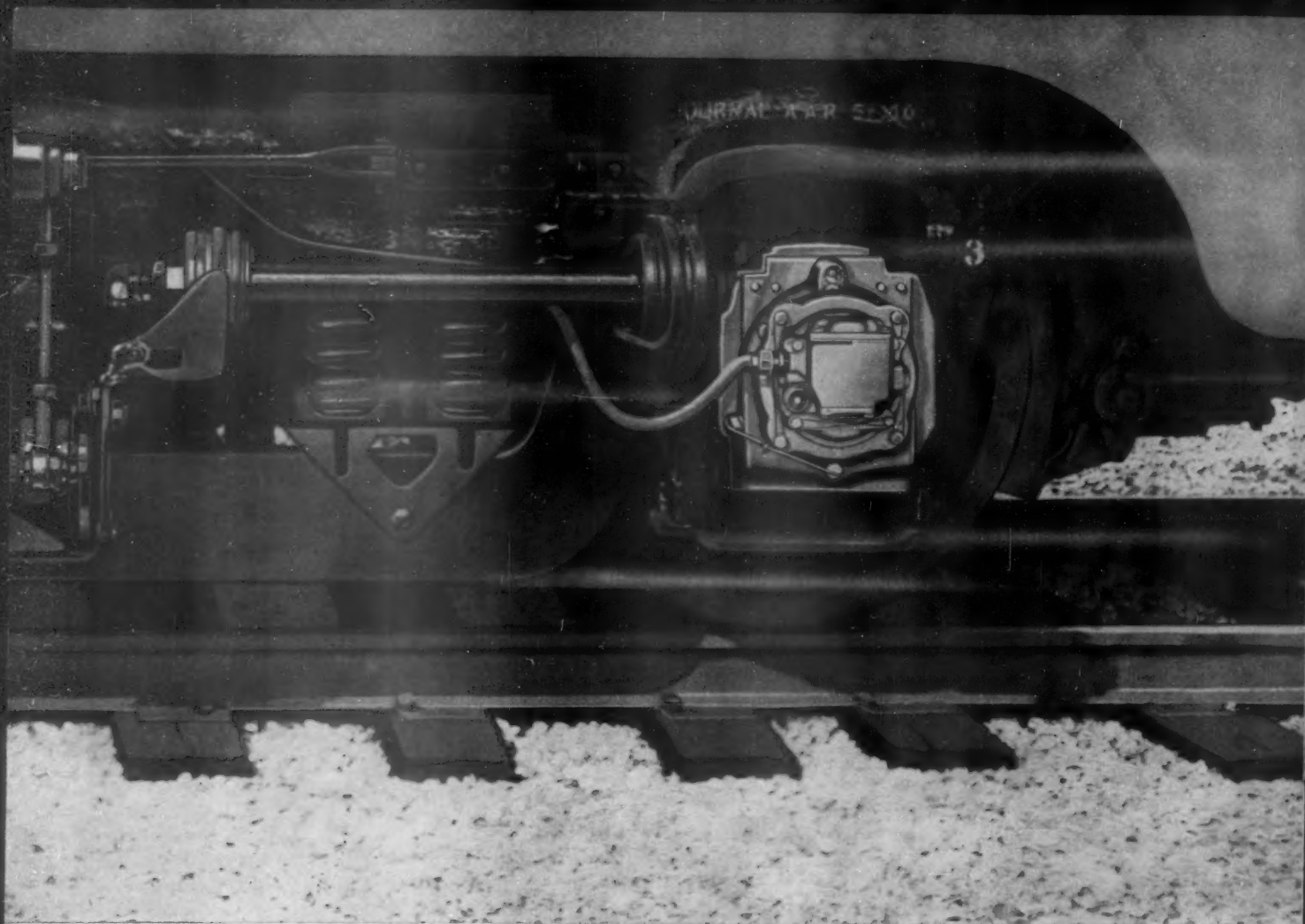
Go up 20,000 ft to make location maps . . .

. . . effective for selecting the best route in areas where ground reconnaissance is well nigh impossible. . . . p.40

BRIEFS

A new chairman . . .

. . . will head the House Committee on Interstate and Foreign Commerce in the next Congress. Representative Priest, Democrat of Tennessee, who was chairman for the present Congress, died October 12. Prospective chairmen are Repre-



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Current Statistics

Operating revenues, eight months	
1956	\$6,954,232,982
1955	6,590,067,867
Operating expenses, eight months	
1956	\$5,374,619,154
1955	4,968,039,671
Taxes eight months	
1956	\$731,401,365
1955	719,134,174
Net railway operating income, eight months	
1956	\$675,628,799
1955	732,614,139
Net income, estimated, eight months	
1956	\$530,000,000
1955	579,000,000
Average price 20 railroad stocks	
October 30, 1956	97.84
November 1, 1955	90.92
Carloadings revenue freight	
Forty-two weeks, 1956	30,644,843
Forty-two weeks, 1955	30,379,587
Average daily freight car surplus	
Wk. ended Oct. 27, 1956 ..	3,379
Wk. ended Oct. 29, 1955 ..	2,136
Average daily freight car shortage	
Wk. ended Oct. 27, 1956 ..	13,916
Wk. ended Oct. 29, 1955 ..	22,659
Freight cars on order	
October 1, 1956	122,421
October 1, 1955	52,913
Freight cars delivered	
Nine months, 1956	47,897
Nine months, 1955	25,901
Average number railroad employees	
Mid-September 1956	1,041,404
Mid-September 1955	1,092,367

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX, THE ENGINEERING INDEX SERVICE AND THE PUBLIC AFFAIRS INFORMATION SERVICE. RAILWAY AGE, ESTABLISHED IN 1856, INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE. NAME REGISTERED IN U. S. PATENT OFFICE AND TRADE MARK OFFICE IN CANADA.

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Week at a Glance CONTINUED

sentative Harris, Democrat of Arkansas, and Representative Wolverton, Republican of New Jersey—depending upon their own reelections and which party controls the next Congress.

Carriers are wasting "a lot" of money . . .

. . . in "non-productive expense—in so-called 'advertising' and 'public relations,'" in the opinion of ICC Chairman Arpaia. He has in mind "unwarranted expenditures" such as "lavish entertainment, expensive trips and substantial gifts which are tantamount to rebates." The public cannot be expected to pay for such "fanfaronades," he says, adding that the commission cannot countenance such practices, "which contravene the spirit as well as the letter of the Elkins Act."

Truckers' ton-mile take . . .

. . . approached five times the rail average in 1955. Common and contract truckers then got a weighted average of 6.351 cents per ton-mile, while railroads were collecting only 21.6% as much—1.37 cents. These are calculations of the ICC's Bureau of Transport Economics and Statistics which also figures that the spread increased between 1954 and 1955, the truck average rising while the rail average dropped. The 1954 averages were 5.989 cents for trucks and 1.421 cents for railroads.

A fight over freight charges . . .

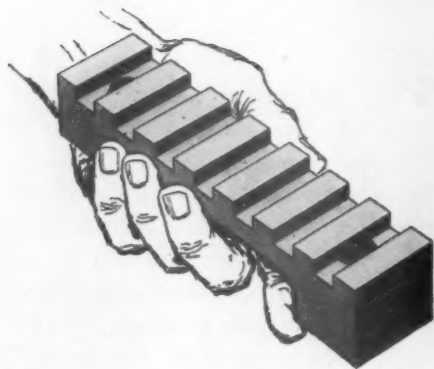
. . . is developing in a case pending before the ICC, as the Fibre Box Association has protested a rail tariff (Hinsch, No. 4735) which it says would assess charges on household appliances without regard for metal rack containers used in such shipments. Box makers contend tariff discriminates against shippers using fibre containers, the weight of which is included in shipping charges.

Railroads get only about two-thirds . . .

. . . of what freight forwarders spend for transportation service. That is pointed up in figures for this year's first six months. The large forwarders then paid transport agencies a total of \$152 million, of which railroads got \$103 million, line-haul truckers, \$24 million, and water carriers, \$800 thousand. The remaining \$24 million went principally for pick-up and delivery and transfer services.

How R-S JOURNAL STOPS will further Reduce Solid Bearing Operating Costs

and pay for themselves in less than 3 years!



Tests have proved that this new device will greatly improve bearing performance and journal lubrication, will at least double bearing life, reduce wheel flange wear and make other significant savings in freight car operation.

STABILIZE the solid bearing assembly and you approach the maximum in bearing performance. You do just that with R-S Journal Stops. Best of all, they pay for themselves in less than 3 years. Here's how:

First, you reduce routine yard servicing and oiling requirements. Packing seldom needs adjustment, and you don't need oil so often either. (Other lubricators, pad or mechanical, will benefit, too). You cut car oilers' time in half, and inspectors' time by as much as 25%. When enough cars are Journal Stop equipped that could mean savings close to \$18.00 per car per year.*

Second, all indications point to 3-year periods between periodic attention as required by Rule 66. That would cut current costs in half — save as much as \$6.00 per car per year.

Third, and conservatively, you'll reduce road repair costs to a third of what they now are — possibly a great

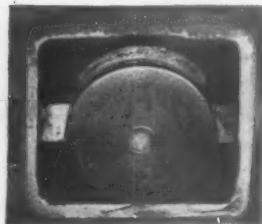
deal more. That means minimum savings of \$6.00 per car per year.

Fourth, you'll cut bearing consumption in half — use less than 1½ bearings per car per year. In annual savings that will mean about \$4.00 per car.

The above four items alone represent potential annual savings of \$34.00 per car. Add to these the tremendous savings due to reduced wheel flange wear and a 3-year recovery estimate is probably conservative.

One private car company whose total savings are determined largely by billings that don't cover servicing costs, has already estimated recovery of total installation costs in less than 3 years. Operating roads will save even more. Write us today for full information. Magnus Metal Corporation, 111 Broadway, New York 6; or 80 E. Jackson Blvd., Chicago 4.

*These and other estimated savings are based on unbiased studies of AAR solid journal bearing operating costs.



Unretouched photo of the RS Journal Stop installation with conventional waste packing. Other lubricators are similarly "contained."

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RRs Need More Cooperation

In speech to Associated Traffic Clubs, President Harrison of the Railway Clerks asks equal share in progress for railroads and their employees

"Railway employees give full credit to railway managements, to railway investors, and to technicians and scientists" for the progress in transportation which railroads have achieved since 1900. "Even though it may entail some burdens, some hardships, some dislocations, I hope progress will continue," George M. Harrison told the Associated Traffic Clubs of America during their 33rd annual convention at Miami Beach, Fla., October 24-26.

In his address to the ATC's October 25 luncheon, the president of the Brotherhood of Railway Clerks reviewed the growth since 1900 of transportation output and the productivity of railway employees. "We know," he said, "how carefully, how thoroughly, how intelligently management officials have worked to bring about the great advances in transportation methods. . . . Employees give full credit to the army of devoted and energetic salesmen who make the indispensable contact between the industry and the public."

Pointing out, however, that "it is the human being upon whom the whole structure depends," Mr. Harrison included in his talk a plea for better wages and working conditions for railroad employees. They, he declared, have lagged behind employees of other industries, in large part because of the "competitive pressure" to which railroads are subjected by regulation.

"We are always among the last to move," he declared, largely because "the public seems to fail to understand our problems."

"We could use a little greater cooperation, a little less pressure in meeting those problems. . . . The transportation industry, and especially the railway industry, has been giving better service for steadily lower relative prices. In the face of that record, the owners, the managers

and the employees should be allowed to benefit with all other Americans in the rapid progress of our great nation."

Other major addresses during the ATC convention were delivered by U.S. Senator George A. Smathers; by Board Chairman T. C. Burwell, vice-president of the A. E. Staley Manufacturing Company, Decatur, Ill.; and by George Odiorne, director of the American Management Association's intra-company management program.

Mr. Burwell, pointing out that transportation is often taken for

granted, challenged "all who derive their livelihood from transportation, whether buyer or seller, to strive for recognition of the importance of transportation by bringing about a more complete knowledge and understanding of this important element of our economy." Declaring that National Transportation Week [Railway Age, Oct. 1, p. 4] during which the convention was held, was designed to accomplish that end, he charged his audience to: "Continue to advocate maintenance of a strong, efficient, privately owned and operated and soundly financed transpor-

Railroads Ready Interim Rate Plea

Counsel for eastern and western railroads have prepared tentative plans for filing with the Interstate Commerce Commission of a new freight-rate petition seeking an immediate advance of something like 7% to offset prospective wage increases and rises in other costs which have come since the filing of the Ex Parte 206 plea for a 15% increase.

The plans were shaped up last week at a meeting in Washington, D. C. The prospective wage increase is the 26½ cents per hour offered over the next three years, including 12½ cents to become effective at this time (Railway Age, October 29, page 4). Settlement on that basis is understood to have been reached with unions representing non-operating employees, but the unions seemed disposed to delay getting on the dotted line until after election.

On such a timetable, finalizing of the agreement could come this week, and it was expected that there would be a prompt follow-through to the filing of the new rate plea at the ICC. If extended to the operating em-

ployees as well, the initial cost of the wage adjustment, i.e., the 12½-cents raise immediately effective, would be in excess of \$300 million a year. Each cent per hour would amount to about \$25 million.

Whether railroads in Southern territory would become parties to the new plea was not learned as this issue went to press. They did not join in the Ex Parte 206 petition, but the commission nevertheless included them among respondents in the case.

Presumably the proposed immediate increase would be in addition to the 15% sought in the Ex Parte 206 petition. That petition anticipated such a situation when it said: "If operating expenses should be increased subsequent to the filing of this petition, whether by further increases in prices of fuel, materials and supplies, or by increased wages, it may become necessary to seek additional relief from the commission."

On this additional-increase basis, the proposed new plea would also be consistent with the original petition's purpose to improve rates of return.

tation system, so regulated that each carrier may realize its full competitive capabilities and thereby serve the needs of our country both in peacetime and in periods of national defense."

Mr. Odiorne's address, on "Traffic Management in the Overall Management Picture," was occasioned in part by a recent *Railway Age* editorial [Aug. 20, p. 23] which said: "increased effectiveness of management is the one master key that unlocks all the doors leading to improved performance."

There is, he pointed out, no set rule for the position which a traffic manager occupies on the management team of any given company, but, in any event, his job is "to get results from the people he has to work with." This requires him to "organize, plan, control, and develop people," which, in turn, means "proper recognition of good work done, establishment of good goals, and development of senses of belonging, of adequacy and of security."

F. L. O'Neill, general traffic manager, Minnesota Mining & Manu-

facturing Co., St. Paul, was elected president of ATC, to succeed E. A. Pomeroy, Jr., traffic manager of National Malleable & Steel Castings Co., Cleveland. L. E. Galaspie, director of traffic of Reynolds Metals Company, Richmond, Va., succeeds Mr. O'Neill as executive vice-president. Raymond P. DeGroot, general western freight agent, Luckenbach Steamship Company, Chicago, and R. Paul Yellen, general agent, Norfolk & Western, St. Louis, continue, respectively, as secretary and as treasurer and assistant secretary.

T-O-F-C to Give RRs \$600 Million More

Piggy-Back, Inc., president expects more haulage of common carrier trucks; Trailer Train car pool participants grow

Piggybacking is growing so fast—as indicated by three late-October developments—that it will give railroads an extra \$600 million income annually "within a very few years," according to Deodat Clejan, president of Piggy-Back, Inc.



The American Way

Development of sound labor-management relationships on U. S. railroads is explained to Professor Tojuro Murai (left), during recent interview with Lawrence W. Horning (center), vice-president—personnel, New York Central System. An interpreter, Takao Akiyama (right), aided during the interview. Professor Murai—member of the law faculty at Meijo University in Nagoya, Japan—is meeting in this country representatives of various U. S. industries under a State Department program to acquaint foreign leaders with the democratic American way of life.

He told the New York Society of Security Analysts recently that he is sure "25% of the motor common carriers' long distance business in the United States will go piggyback and can go piggyback." Last year's total piggyback revenue for railroads, he said, was about \$30 million.

T-O-F-C development thus far has been retarded, Mr. Clejan told the analysts, by "purely economic" reasons. "Between business that will definitely go piggyback and business that will never go piggyback, there is a great area of potentialities. It is up to [financial experts] to decide and plan future investments according to your own ideas based on the limits and the rapidity of growth in this new industry."

Mr. Clejan referred to one of last month's developments in the "piggyback picture": announcement that the Erie will participate with the New Haven in piggyback movement of common carrier trailers between New England points and Cleveland-Chicago starting about January 1, 1957. This will involve use of Piggy-Back Service Corp. for terminal operations and eventual purchase by the Erie of specially designed Piggy-Back, Inc., flat cars.

Piggyback news was also made with announcement of the first trans-continental service as reported in *Railway Age* (Oct. 29, p. 4). This service, for the present at least, is limited to only a few commodities.

The third development came in the form of an announcement that the Boston & Maine, the Burlington and the Wabash have joined the five other roads participating in the Trailer Train Company pool of specially designed flat cars. A fleet of 530 such cars is now reported in the pool. Other participants are the Pennsylvania, the Norfolk & Western, the Missouri Pacific, the Katy and the Frisco.

The time is ripe right now for piggyback expansion, Mr. Clejan said in his address. Problems, other than financial, which had limited t-o-f-c participation to just three railroads prior to 1954, "are now solved," he said. "The psychology is right for piggyback, and the legal questions were answered by the ICC . . . The proof is that today almost 40 railroads are in the piggyback business."

He said the car developed by his company has solved three physical problems encountered in operations: it makes fast terminal handling possible; meets low clearances on roads where standard trailer bodies on standard flat cars will not pass; and, through a flexible mooring device, reduces shock to the trailer.

Mr. Clejan reported that "the railroads handling about 60% of the piggyback business in 1955 were those that purchased our cars." He also pointed out that different forms of the service are offered by individual roads: "the New Haven works in collaboration with the truckers; the Kansas City Southern participates in joint rates with truckers; (Continued on page 10)

MARKET OUTLOOK THIS WEEK

Carloadings Down.—Loadings of revenue freight in the week ended October 27 totaled 816,803 cars, the Association of American Railroads announced on November 1. This was a decrease of 11,938 cars, or 1.4%, compared with the previous week; a decrease of 12,845 cars, or 1.5%, compared with the corresponding week last year; and an increase of 80,570 cars, or 10.9%, compared with the equivalent 1954 week.

Loadings of revenue freight for the week ended October 20 totaled 828,741 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS			
For the week ended Saturday, October 20			
District	1956	1955	1954
Eastern	130,688	128,161	116,366
Alleghany	156,471	154,709	126,561
Poconos	67,391	62,211	54,262
Southern	133,222	135,825	129,423
Northwestern ..	139,431	140,791	117,256
Central Western	141,057	144,100	141,909
Southwestern ..	60,481	63,281	60,168
Total Western			
Districts	340,969	348,172	319,333
Total All Roads	828,741	829,078	745,945
Commodities:			
Grain and grain products	56,406	58,356	55,646
Livestock	15,333	15,352	16,594
Coal	148,819	133,290	132,098
Coke	12,096	13,306	8,700
Forest Products ..	45,672	46,512	46,465
Ore	87,752	80,942	52,054
Merchandise l.c.l.	61,886	65,106	64,398
Miscellaneous ..	400,777	416,214	369,990
October 20	828,741	829,078	745,945
October 13	823,207	821,578	721,336
October 6	815,004	801,559	702,910
September 29 ..	831,438	815,535	721,643
September 22 ..	822,255	813,720	710,215
Cumulative total,			
42 weeks	30,644,843	30,379,587	27,445,311

IN CANADA.—Carloadings for the seven-day period ended October 14 totaled 83,282 cars, compared with 94,633 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
October 14, 1956	83,282	33,157
October 14, 1955	84,482	32,636
Cumulative Totals:		
October 14, 1956	3,486,855	1,263,632
October 14, 1955	3,188,470	1,280,949

New Equipment

FREIGHT-TRAIN CARS

► **Lehigh Valley.**—Will spend over \$6,000,000 annually for two years for repairing and rebuilding freight cars; program—to include rebuilding 1,400 coal cars and 500 gondola cars at road's Packerton, Pa., shops, and 500 steel box cars at Sayre, Pa., shops—will begin this month.

► **Northern Pacific.**—Will build 100 40½-ft stock cars and rebuild an additional 100 such cars, at its Brainerd, Minn., shops; both lots will have metal slots.

► **Seaboard Air Line.**—Ordered 2,400 freight cars, costing approximately \$19,700,000, as follows: 700 70-ton coal hopper cars, Pullman-Standard; 200 70-ton high-side gondola cars, Magor Car; 700 50-ton low-side gondola cars, Bethlehem Steel; 300 pulpwood cars, Greenville Steel Car; 500 covered cement cars, ACF Industries; the 200 high-side gondola cars and 300 pulpwood cars will have roller bearings; deliveries scheduled to begin June 1957 and be completed in November 1957; SAL's request for bids for this equipment was reported in Railway Age, Oct. 8, p. 9.

LOCOMOTIVES

► **Overseas Delivery Dates Set.**—General Motors Overseas reports following delivery schedules for export orders: Argentina (State Rys.), 25 1,425/1,310 hp, 5½-ft-gage G-12 units, Jan.-Feb. '57; Brazil (Mogiana Ry.), 5 1-meter-gage G-12s, Apr. '57, and (Rio Grande do Sul Ry.), 20 1-meter G-12s, May '57; Chile (Chilean Exploration Co.), 1 SW-1200, Feb. '57; Indonesia (State Ry.), 35 3½-ft-gage G-8s, Jan.-Mar. '57; Liberia (Liberian Mining Co.), two 3½-ft-gage G-8s, November; Norway (Sydvaranger Mining Co.), one G-12, December; Saudi Arabia (State Ry.) 1 FT-9, November; Venezuela (Orinoco Mining Co.), two SW-900s, Apr. '57.

► **Pennsylvania.**—Directors authorized purchase of 50 1,750-hp diesel-electric freight units for delivery during summer of 1957; when delivery is completed, PRR will have 2,184 diesel units totaling 3,085,320 hp; PRR operations will then be 95% diesel-electric or electric powered, one or other form of such power handling virtually 100% of passenger service, 95% of freight and about 92% of switching service; only 259 steam locomotives will be left in PRR service, to be used largely at selected points in time of especially heavy seasonal traffic.

New Facilities

► **Chicago & North Western.**—Will modernize Proviso yard with automatic retarder control and "push button" switching; so far this year C&NW has spent \$450,000 on mechanized track maintenance equipment.

(Continued from page 8)

and the Southern Pacific is fighting the truckers and using exclusively railroad-owned trailers."

"With the New Haven and the

B&M in the east, the Erie in the mid-west, the KCS in the south and south-west, and the Southern Pacific in the west," he said, "a vast network for interchange" has been created.

RRs Got 49.4% of '55 Freight Traffic

Railroads' "share" of intercity freight traffic, measured by ton-miles, remained about the same in 1955 as it was in 1954—49.4% compared with 49.5%. The latter marked the first time that the rails' share had fallen below 50%.

The truckers' "share," including private carriage, was down from

19.1% to 17.7%, while the "share" of carriers on inland waterways, including the Great Lakes, was up from 15.6% to 16.9%. These and like figures for other agencies are set out in the accompanying table, reproduced from "Transport Economics," published by the ICC's Bureau of Transport Economics and Statistics.

Volume of Intercity Freight Traffic in Ton-Miles By Kind of Transportation, Years 1954 and 1955

Transport agency	Ton-miles (billions)		Percent change over 1954	Percent of annual total	
	1954	1955 ¹		1954	1955 ¹
Railways, steam and electric, including mail and express	556.6	631.3	+ 13.4	49.5	49.4
Motor vehicles, for-hire and private use	214.6	226.2	+ 5.4	19.1	17.7
Inland waterways, including Great Lakes	2173.7	216.5	+ 24.7	15.5	16.9
Pipe lines (oil)	179.2	203.2	+ 13.4	15.9	15.9
Airways (domestic revenue service, including express and mail)	0.4	0.5	+ 21.2	—	—
Grand total	1,124.5	1,277.8	+ 13.6	100.0	100.0

¹ Preliminary.

² Revised.

³ Represents about 0.04 of 1% in both 1954 and 1955; basic figures are 397 million in 1954 and 481 million in 1955.

"Get Public Relations on Local Level"

"Get your public relations down to the local level," the American Railway Magazine Editors' Association was told by no less than three separate speakers during its 34th annual convention at Miami Beach, Fla., October 24-26.

They, and other speakers as well, emphasized the fact that "business has a good story to tell," but frequently fails to tell it simply or effectively enough to reach "the man in the street."

Need for better local public relations activity was stressed especially by the banquet speaker, Thomas W. Haga, editor, Miami News; by Owen J. Murry, assistant to president, Central of Georgia, who spoke at the concluding luncheon; and by C. J. Corliss, manager, public section, public relations division, Association of American Railroads. The importance of the "business story" was brought out at another luncheon ses-

sion by Philip Moore, president, First Research Corporation, Miami.

Other highlights included sessions on technical aspects of magazine preparation and production; a hotly contested debate by panels of editors on the topic, "Who Communicates Most Effectively—Management or Labor?"; and group discussions on various phases of "Imagineering in Communications," which was the overall theme of the convention program.

T. J. Zirbes, special public relations representative of the Rock Island at Chicago, was elected president of the editors' group, to succeed John Green of the Reading. Other officers for 1956-1957 are: First vice-president—Marshall W. Hamil, Cotton Belt; second vice-president—Norman M. Stone, New York Central; treasurer (re-elected)—John J. Coonley, Illinois Central; and secretary—John Knifke, Santa Fe.

Technical Tidings

Selected from November Railway Monthlies.

"Nickel and dime" failures of locomotives caused by minor defects in control equipment, especially relays and contactors, are being reduced by sealed enclosures. The way this is done is summarized in Railway Locomotives and Cars.

Maintenance of "wire radio," otherwise known as carrier equipment, on the railroads is the subject of an up-to-date review in Railway Signaling and Communications.

"Direct sanding" is used now on diesel locomotives of several roads. The sand is delivered to the boxes from small "pots" with a capacity of 1/8 cu yd. Under some conditions, these have advantages because they eliminate large overhead storage tanks. The experience of the Burlington is described in Railway Track and Structures.

The New Haven's new lightweight "Dan'l Webster" consists of nine cars with a locomotive at each end of the train. The locomotives employ mechanical drive on the New Haven's lines and use third-rail electric power in Grand Central Terminal territory. The way this is done is described in the current Railway Locomotives and Cars.

Carrier equipment can be designed to handle several telephone circuits on one pair of long wires. By taking advantage of this fact, the Great Northern has relocated train dispatchers' offices, a move which, along with several other measures, has permitted combining three divisions into two. Railway Signaling and Communications explains this operation.

Because it costs \$38 to renew a cross-tie on the elevated structure of the Metropolitan Transit Authority in Boston, this road undertook to determine how much the life of ties could be extended by use of tie pads. Railway Track and Structures reports that the results were phenomenal and led to the decision to install tie pads on all new ties.

Crump Says CPR Has Duty To Public and Investors

The "Canadian Pacific is not only a great transportation enterprise vitally concerned with Canadian growth and expansion," CPR President N.R. Crump recently told the Canadian Club at New York City, but it is also "closely identified with Canada's industrial and resource development."

"As such, it is not only fitting but imperative," Mr. Crump said, "that we should concern ourselves with the pattern and character of Canadian expansion" both as a railroad serving the public, and also "because of our responsibilities to the investor."

Speaking in the main about the growth and potential of the Canadian economy, Mr. Crump said the CPR must be self-reliant "in preparing to meet the challenge of change and competition."

Train Dispatchers Elect New President

Joseph B. Springer was elected president of the Train Dispatchers Association at the union's 17th general convention in Chicago. Mr. Springer, former union secretary-treasurer and general chairman for the Baltimore & Ohio, succeeds O. H. Braese who declined re-election.

The convention also voted to drop the union's independent status and affiliate with the AFL-CIO.

Appeals to Courts Delay Ore-Rate Parity

Extension to New York of the Baltimore basis of rates on imported iron ore has been postponed by the Interstate Commerce Commission because its decision in the case has been appealed to the courts.

The decision was embodied in a report on further hearing in I&S No. 6074 (Railway Age, Oct. 29, p. 13), wherein a prior commission report gave the Baltimore basis to Philadelphia.

The appeals from the present commission decision were filed in Boston by roads serving that port, to which the commission refused to extend the parity plan; and in Baltimore by roads seeking to restore former differentials in favor of that port.



New Yard Opened to Serve Ford Motor Co. Plant

These DF box cars are lined up in the new Chicago & Eastern Illinois-Chicago Heights Terminal Transfer freight yard built to serve the Ford

Motor Company's stamping plant at Chicago Heights, Ill. When peak production is reached next August, the yard will be handling 165 loads a day.

Serviceable Fleet Up by 3,496 Cars

Class I railroads added 3,496 cars to their serviceable fleets in September and thus achieved a two-months' gain of 7,083 cars.

This was reported by Chairman A. H. Gass of the Car Service Division, Association of American Railroads, in his latest review of "The National Transportation Situation." Mr. Gass' figures showed that the entire September gain was due to a reduction in the bad-order backlog.

That was cut from 74,305 cars on September 1 to 70,416 cars on October 1. The stepped-up repair programs also contributed substantially to the two-months' gain, the bad-order backlog on August 1 having been 77,490 cars.

Meanwhile, Class I roads and their car-line affiliates installed only 3,074

new cars in September. This failed to offset the month's retirements, which totaled 3,591 cars, and it was the lowest installation total of any of the 12 months ended with September. It was due to inability to secure adequate supplies of steel, Mr. Gass said.

Detention reports for September indicated that 19.15% of cars placed that month were detained beyond the free time, compared with 19.7% for August and 19.69% for September 1955.

Performance data showed that freight cars produced an average of 873 net ton-miles per serviceable car per day in July, the latest month for which figures were available. That was below June's 1,051 ton-miles and July 1955's 1,000 net ton-miles.

Do Give-Aways Improve Safety?

"If we can get people to attend safety meetings we can get our safety message across," R. P. Hamilton, superintendent of safety, Frisco, told the Chicago annual meeting of the National Safety Council's Railroad Section.

The three day session—October 23-

25—was highlighted by a debate involving six railroad safety superintendents, making up two opposing teams, on the question—"Do Give-Away Programs Really Pay Off with Improved Safety Performance?"

Give-away programs have boosted attendance at Frisco employee-family

safety meetings, Mr. Hamilton declared. "To sell safety you must attract attention and then get people to take part. Our door prizes, such as bicycles and electric skillets, are designed to attract the employee's whole family."

Frisco started its door-prize giveaways in 1947 to encourage family attendance at safety meetings, Mr. Hamilton explained. At one division point the first family meeting attracted 84 persons; today the same meeting attracts 1,100.

What does this mean in terms of the Frisco's accident rate? Six years ago the road's rate was 10.75, today it's down to 5.70, Mr. Hamilton pointed out.

"Give away prizes won't buy loyalty," E. W. Hobbs, superintendent of safety, Missouri Pacific, countered, although supervisors may accept the give away program "as a substitute for building an 'honest to goodness'

safety program based on constructive action and deeds."

Denver & Rio Grande Western uses a give-away program, R. S. James, the road's superintendent of safety and fire prevention, told the meeting. "We think it has paid off. Our accident rate has fallen from 12.5 in 1948 to 3.02 in 1955." The program has attracted female and teenage attendance at our family meetings. It is attacking the problem of off-the-job accidents, he said.

"As a general rule, foremen have one standard of safety which they go by, and another to be followed by the employee," J. W. Adams, manager, planning and production, L&N, pointed out.

New officers of the section are: General Chairman, J. H. Williams, Texas & Pacific; vice-chairman, J. Lloyd, Jersey Central Lines; secretary and news letter editor, L. C. Hahney, Elgin, Joliet & Eastern.

Private Carriage Growth Deplored

Continued expansion of private carriage "is not in your best interest as shippers and consumers unless

you are prepared to replace and perform the historical functions of public carriage," the Private Carrier



Korean Transport Record Wins Lasher DSM

Major General S. R. Browning (left) presents Distinguished Service Medal to Brigadier General E. C. R. Lasher in recognition of his achievements as

transportation officer during Korean hostilities in 1950-1951. Gen. Lasher is now executive director of new Military Traffic Management Agency.

Conference was told at its recent New York meeting.

This section of the American Trucking Associations heard Interstate Commerce Commissioner L. K. Walrath state that:

"If high value traffic continues to leave public carriage, we will be forced to accept widespread restrictions in service, along with higher dollar costs, for the diminishing freight left to regulated carriage, in order to avoid the ultimate bankruptcy of the public carrier system or—as an equally undesirable alternative—government subsidy or control of the public carriers' operations along arterial routes in order to keep them alive. In either event, manufacturers and shippers will have lost mass transportation at low cost, which has been your life-blood of success. The entire nation will have suffered an economic thrombosis destructive of American standards of living."

Commissioner D. P. McPherson, Jr., at another session of the ATA meeting, warned that it may be time now for Congressional re-definition of the exempt commodity provisions. To achieve this, though, he said, it will be necessary to prove to Congress that regulated transportation will benefit the farmer and consumer more than unregulated carriage now does.

Commissioner Owen Clarke told the Contract Carrier Conference that the importance of rate relationships between competing shippers (as opposed to the exact level of transportation charges) "cannot be over-emphasized" although it is often overlooked. Mr. Clarke also questioned "how much protection shippers and communities would have from unjustly discriminatory and prejudicial freight rates if the rate-making proposals in H.R. 6141 [the Cabinet Report bill] and related bills were enacted."

Haden Leaves ICC

T. Leo Haden has retired from the staff of the Interstate Commerce Commission where he has been serving since July as consultant in the office of Chairman Arpaia. Mr. Haden assumed this position under a temporary appointment, having retired June 30 as a senior examiner after 50 years of government service, 42 of them with the commission.



New Emblem for British Railways' Equipment

The new emblem, which eventually will be worn by all rolling stock of the British Railways, features the

English rose, the Welsh leek and the Scottish thistle, all surmounted by the British lion holding a silver wheel.

Organizations

ASME Annual Meeting

The Railroad Division of the American Society of Mechanical Engineers will hold joint sessions with the Nuclear Engineering and Oil and Gas Power Divisions, respectively, as well as a single railroad session, during the annual meeting of the society at the Statler and the Sheraton-McAlpin Hotels, New York, November 25-30. The theme of this year's meeting is "Free Exchange of Knowledge - The Path to the Future." The 22nd National Exposition of Power and Mechanical Engineering, under the sponsorship of the ASME, will be held simultaneously at the New York Coliseum.

The program for the Railroad Division sessions follows:

WEDNESDAY, NOVEMBER 28

2:30 p.m.
Railroad (I)—Nuclear Engineering (III)
Progress in Railway Mechanical Engineering 1955-1956.

A Progress Report on the Development of an Atomic-Powered Locomotive, by B. C. Gunnell, Bush Hill Development Corporation.

The Use of Atomic Energy in the Testing of Materials, by W. M. Keller, Central Research Laboratory.

THURSDAY, NOVEMBER 29

9:30 a.m.
Railroad (II)—Oil and Gas Power (IV)
The Hydromechanical-Drive Diesel for High-Speed Ultra-Lightweight Passenger Trains.

Two Dual-Powered High-Speed Locomotives for a New Haven Lightweight Passenger Train, by R. Aldag, Fairbanks, Morse & Co., and F. L. Schlmann, General Electric Co.

Air Brakes for High-Speed-Ultra-Lightweight Passenger Trains, by T. H. Bickerstaff, supervisor air brakes, Atchison, Topeka & Santa Fe.

12:30 p.m.
Railroad Division Luncheon
Speaker: William White, president, Delaware & Hudson. Subject: The Current Railroad Scene.

2:30 p.m.
Railroad (III)
The Combination Vehicle as a Special Freight Car for Industry.

The Effect of Improved Draft Gears and Spring-Dampened Trucks on Freight-Car Shops, by H. W. Faut, retired engineer locomotive equipment, New York Central System.

Trailers in Piggy-Back Operation from a Manufacturer's Point of View, by J. J. Black, Trailmobile, Inc.

Papers on the Development of a Supercharged Medium-Speed Two-Cycle Opposed Piston Engine, by A. K. Antonsen, Fairbanks, Morse & Co.; Design and Development of a Two-Cycle Turbocharged Diesel Engine, by P. J. Lozecky, General Motors Corp.; Future Development of the High-Speed Diesel Engine, by Ernest Chatterton, D. Napier & Son, Ltd., London and on Torque Converters—a Versatile Drive, by H. L. Wilke, National Supply Company, will also be presented at morning and afternoon sessions of the Oil and Gas Power Division on November 28. At a Safety session on Friday morning, November 29, J. B. Skinner of the American Mutual Liability Insurance Company will present a paper on the Toxicity of Materials of Interest of the Mechanical Engineer.

The Outlook for Fuels is the topic for a Fuels-Power session on Tuesday morning, November 27. The "New Look" for Fuels and Power will also be discussed at a Fuels Luncheon on the same day.

The annual banquet will be held Wednesday evening, November 28.

National Industrial Traffic League.—Will hold its 49th annual meeting November 15-16, in the Hotel Commodore, New York. C. Norman Stabler, financial editor, New York Herald-Tribune, will speak on "Diversification of Industry" at a luncheon on the 15th.

New York Railroad Club.—H. E. Gilbert, president, Brotherhood of Locomotive Firemen and Enginemen, will speak on "Labor's Interest in Better Railroading" at a dinner meeting in the Hotel Commodore, November 8. The 84th anniversary dinner is scheduled for December 6, in the Commodore.

Railway Progress Institute.

The annual meeting will be held in the Waldorf-Astoria Hotel, New York, November 14-15. Meetings of the executive committee and governing board are scheduled for the 14th, with the member meeting and dinner on the 15th.

Supply Trade

T. Benton Sevison, Jr., has been added to the sales staff of **United States Rubber Company**, as assistant to the sales manager of Trilok for transportation applications.

Stuart E. Womeldorph, sales representative of Edison Storage Battery division of **Thomas A. Edison, Inc.**, in Birmingham, Ala., has been named Atlanta district manager.

Gene R. Voigt, assistant to general manager of the air tool division, **Aro Equipment Corporation**, has been promoted to sales manager of the division.

Buckeye Steel Castings Company has appointed **A. J. Mello West** (Continued on page 43)

**Save on Your
INDUSTRIAL
TRACK**

**FULLY
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**FOSTER
QUALITY
RELAYING
RAILS**

Lower installation and maintenance costs—handle more cars better. Foster nationwide warehouses also stock every New Rail Section 12# through 175#, Switch Material and Accessories to meet your specific job requirements.

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UNION ROUTE INTERLOCKING. With this system an operator selects a route simply by pushing two buttons. All switches and signals are properly aligned automatically for the safe and efficient movement of trains.

What a wonderful

**. . . with all the
newest UNION
Control Systems**



TRAFFIC CONTROL SYSTEMS. With UNION C.T.C., train movements on 1000 or more miles of multiple or single track can be directed by signal indications from one control center. Up-to-the-minute information on the traffic situation is provided visually for an entire railroad.

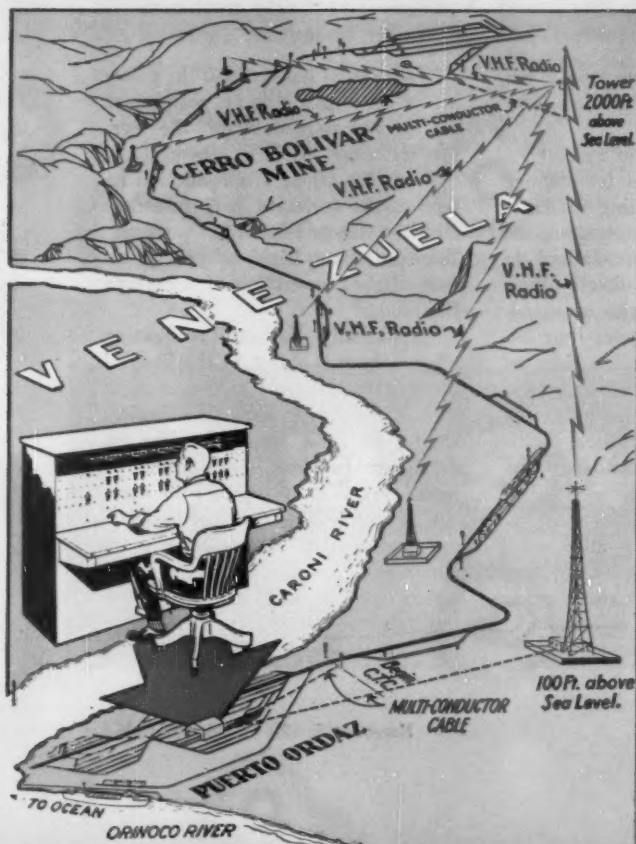
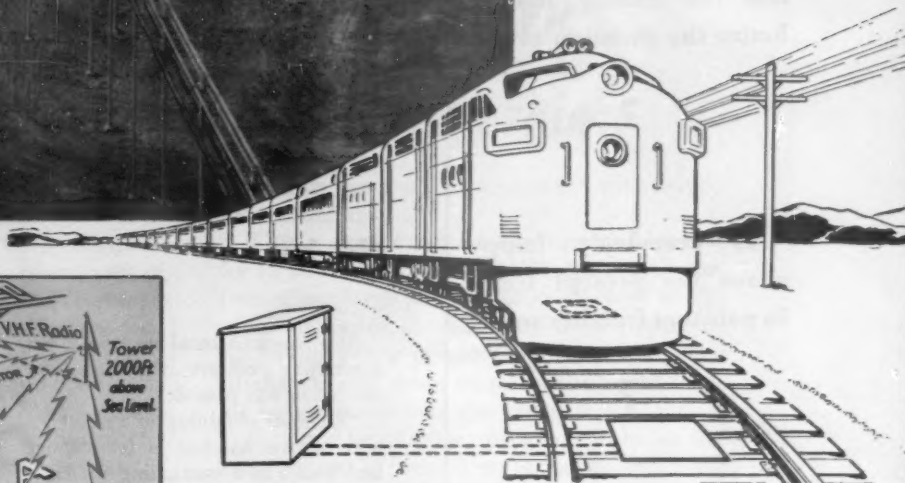


AUTOMATIC TRAIN CONTROL AND CAB SIGNAL SYSTEM. This equipment automatically limits speed or stops the train in accordance with track conditions ahead. In addition, the signal indications are displayed in the cab.

way to run a railroad



AUTOMATIC CONTROL FOR CLASSIFICATION YARDS. A fully automated UNION yard results in lower cost of operation, minimum damage and faster service to shippers. The use of electro-pneumatic retarders and VELAC speed control equipment provides the ultimate in modern operation of classification yards.



IDENTRA® SYSTEM. UNION train identification equipment automatically identifies a train, registers its location, aligns switches, clears signals and identifies the approaching train at the station.

*Trademark

▶ **C.T.C. BY MICROWAVE.** A new railroad in Venezuela is operated with a UNION C.T.C. System which eliminates the usual line wires and uses very high frequency radio. One operator controls train movements over the entire 90 miles of railroad.



UNION SWITCH & SIGNAL

DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

SWISSVALE, PENNSYLVANIA

NEW YORK.....CHICAGO.....PITTSBURGH.....ST. LOUIS.....SAN FRANCISCO

Questions and Answers

Of current interest to the Transportation Department

About two years ago the waybill form was changed to permit placing "stop-off" information in what was considered to be a more visible spot on the form. It was thought that this would help reduce the number of cars being carried by stop-off points. Has the change helped better the situation . . .

?

Is everybody happy about the present trend in painting freight cars . . .

?

CONDUCTED by G. C. RANDALL, district manager, Car Service Division (ret.), Association of American Railroads, this column runs in alternate weekly issues of this paper, and is devoted to authoritative answers to questions on transportation department matters. Questions on subjects concerning other departments will not be considered, unless they have a direct bearing on transportation functions. Readers are invited to submit questions, and, when so inclined, letters agreeing or disagreeing with our answers. Communications should be addressed to Question and Answer Editor, Railway Age, 30 Church Street, New York 7.

Yes.

Stations department heads of the Milwaukee, Missouri Pacific and Northern Pacific, quoted in our September 24 column, were agreed that the change had been beneficial. That column moved one reader to make what seems to be a helpful suggestion. Apparently the idea has worked for him.—G. C. R.

"We had considerable difficulty along that line until we inaugurated the system of placing our Form 225 'stop-off' car sticker on the bills of lading when received. This sticker alerts all employees handling the documents after that, and especially

the typists to show all the stops involved on the waybills. The 'stop-off' sticker is for office use only and is not attached to the waybills."—F. X. Langer, agent, Minnesota Transfer.

[Mr. Langer's gummed sticker is 1 by 2 1/8 in., with a red border 3/32 in. wide running completely around it. In the white center of the sticker are the words "Stop-off Car" in 3/16-in. letters ("Stop-off" on one line, "Car" on a second). A large red arrow just inside the right-hand border, pointed down, helps attract attention.]

No, but . . .

At a recent national meeting of car accounting officers the following resolution was passed:

"Whereas obtaining of correct report of cars handled in interchange and trains is a continuing difficulty of car record and accounting offices, which is largely due to failure of some railroads to stencil their assigned reporting marks or standard abbreviation (not over four letters) of owner's name, on sides of their cars in the manner and location provide on pages L-37 through L-39-D of AAR Mechanical Division's Manual of Standard and Recommended Practices,

"Be it resolved

"(a) That this body urge upon the proper AAR authority to have this provision in the manual made mandatory instead of recommendatory.

"This would not prohibit the painting of car owner's name, monogram or slogan elsewhere on the car. [Italics ours.—G. C. R.]

"(b) A copy of this resolution be sent to the secretary of Mechanical Division, vice-president of Operating-Transportation Division and president of the Association of American Railroads."

(Apparently the car accounting officers do not object to the idea of the slogans, larger lettering, etc., as such. They just think the initials should be in a standard place on each car. Incidentally, it would be interesting to know whether the number of bad initials they get today is any greater than it was some years ago when the number of cars on which initials and numbers were barely visible probably was higher than it is today?—G. C. R.)



NEW POWER...NEW LIFE...NEW "LOOK" FOR YOUR OLD STEAM WRECKER...

With L. B. Smith Diesel Conversion

The 29-year-old Long Island locomotive wrecking crane shown above has just been completely modernized in our shops. Conversion from steam to Diesel has added years of service, increased efficiency and reduced operating costs on this 150 ton Brownhoist.

Conversion included plenty of power in a GM Diesel with Twin Disc torque converter. Clutches are air-operated by a Westinghouse compressor. The new "Look" benefits the operator, for he now has a complete view of his work from the cab which has been relocated in a right front position. All controls have been

placed in the same arrangement with which he is familiar.

This is one of some 50 cranes modernized by L. B. Smith personnel. With a major portion of our large plant facilities devoted to the repair of cranes, shovels and heavy equipment, we make every possible effort to keep the quality of our work equal to the reputation we have earned over the years.

If your Dieselization program includes the conversion of wrecking cranes, you will undoubtedly benefit from discussing it with us.

For complete information, phone or write

L. B. SMITH, INC.

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Telephone (Harrisburg) RE 7-3431

Commonwealth One-Piece

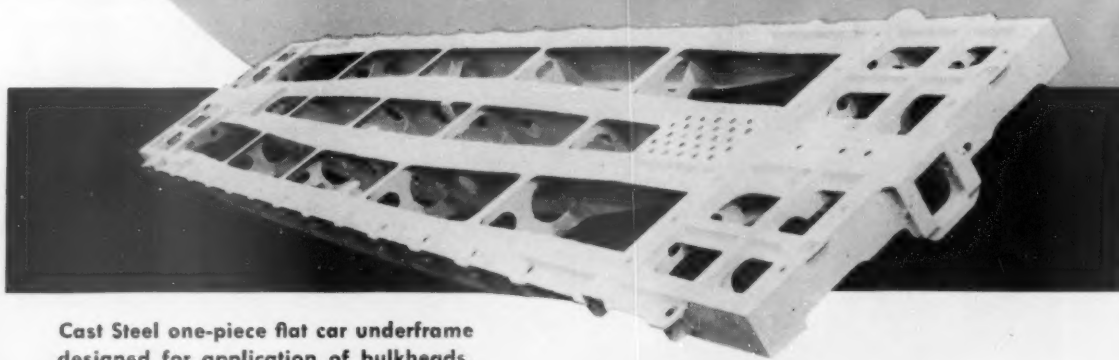
a flat car



a bulkhead flat car



with one underframe design



Cast Steel one-piece flat car underframe
designed for application of bulkheads.



GENERAL STEEL

Underframes give you

Two Cars in One!

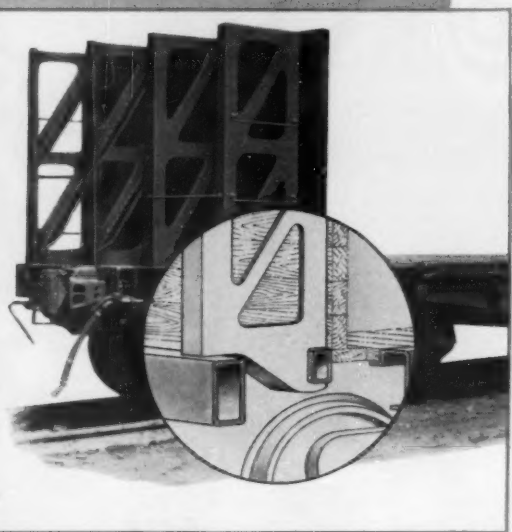
with extra strength for long maintenance-free life!

Commonwealth cast steel flat car underframes actually give you two cars in one—because they have the extra strength required when cars are equipped with end bulkheads. The cast steel interlocking end bulkheads are easy to apply, easy to remove.

It takes a rugged underframe to stand up under heavy concentrated flat car loads and continuous use. Commonwealth underframes are especially engineered to stand up under toughest service demands. In fact, after more than 20 years of rigorous use, all of the original lot of 1500 Commonwealth flat car underframes are *still in active service!* Thousands more are proving maintenance-free performance and long life year after year.

The one-piece underframe eliminates stress concentration—permits better metal distribution providing uniform strength throughout with minimum weight. Corrosion is no problem.

For longest life, lowest maintenance costs and greatest service availability, it's sound economy to equip your flat cars with Commonwealth underframes.



Illustrating application of interlocking cast steel bulkheads... quickly done at low cost.

Plan wisely for the future—invest in Commonwealth underframes

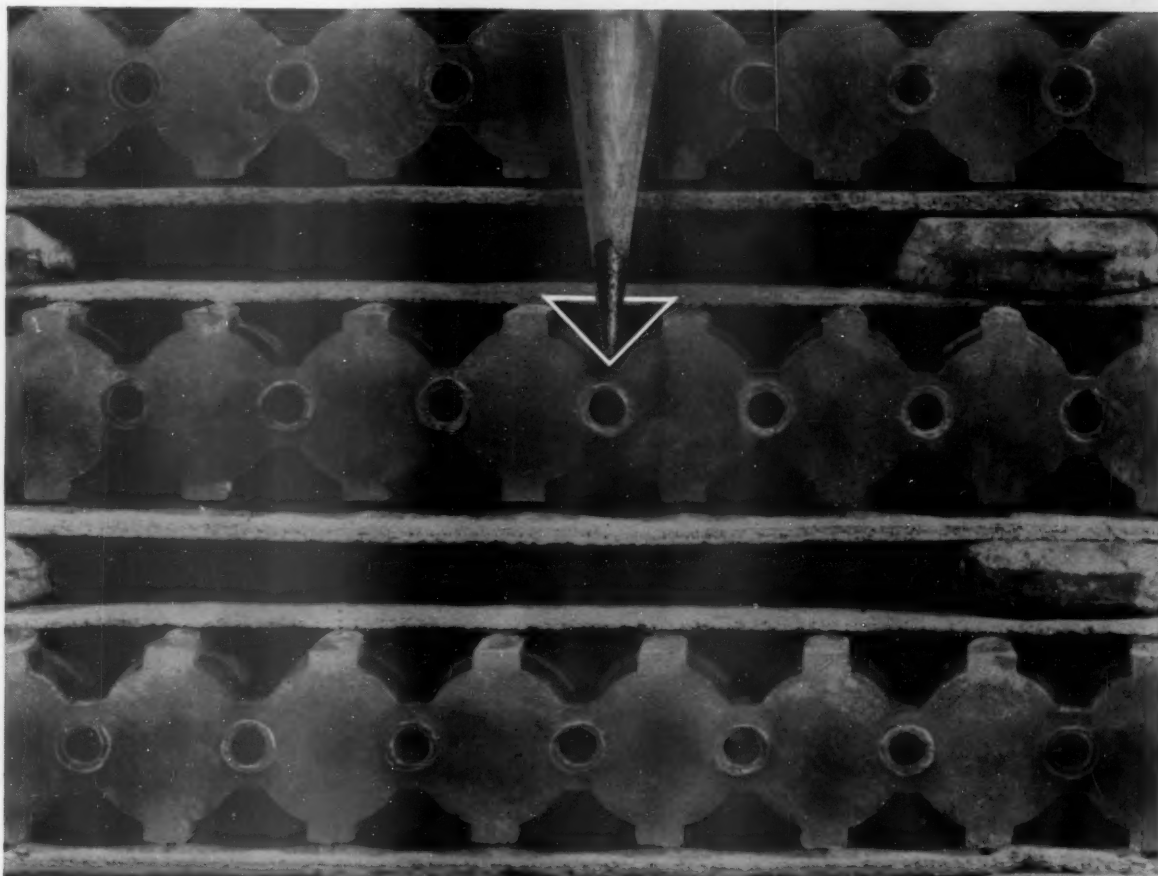
CASTINGS

GRANITE CITY, ILL.
EDDYSTONE, PA.



EXIDE-IRONCLAD BATTERIES

For railway diesel starting



BOTTOM VIEW shows tubular construction of positive plates in an Exide-Ironclad Battery.

Pools of electrolyte next to plates speed heavy load response



BATTERY FOR RAILWAY DIESEL STARTING. Exide-Ironclad Model MVD. Write for Bulletin No. 5348.

When the man at the control says "More power—fast," the positive plate in the storage battery says "More electrolyte—instantly." That's why the Exide-Ironclad Battery can meet heavy load demands so much more rapidly than other types of batteries. And it's the reason they outperform others in so many uses.

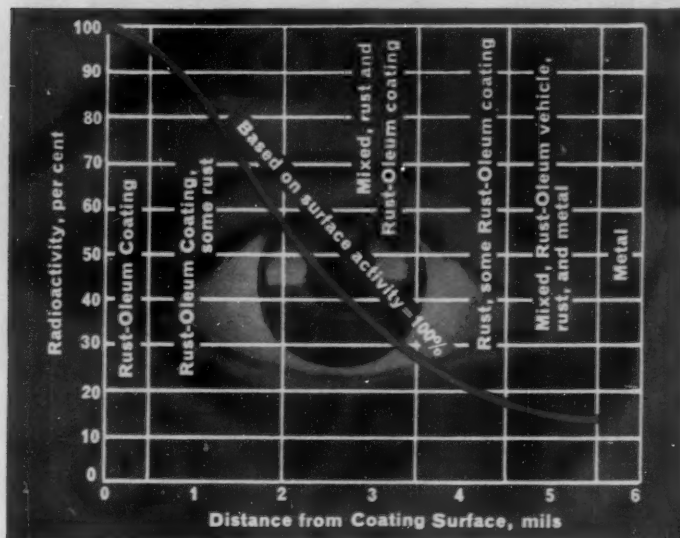
Adjacent to every positive plate in the Exide-Ironclad Battery are these triangular pools of electrolyte standing in reserve. When the call comes for power, the electrolyte is right there where it's needed for swift, sure response. There's nothing to slow down the action. Tiny slits in plastic power tubes let electrolyte in—yet prevent loss of active material.

Only the Exide-Ironclad Battery has this construction.

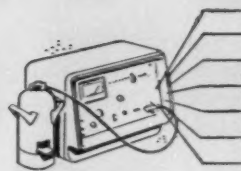
This exclusive feature is only one of the many reasons Exide-Ironclad Batteries have proved so superior in countless applications. When you order batteries for heavy duty service, or the equipment that requires such batteries, be sure to specify Exide-Ironclad. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 2, Pa.

Exide®

See Rust-Oleum penetrate rust to bare metal through the "Eyes" of Radioactivity!



Curved line illustrates Rust-Oleum penetration through rust at each mil level as recorded by Geiger Counter.



Rust-Oleum dries to a firm, decorative coating that resists salt water, sun, fumes, heat, humidity, and weathering.



Geiger Counter traces Rust-Oleum penetration to bare metal! In nearly three years of radioactive research, Rust-Oleum's *specially-processed* fish oil vehicle was radio-activated and formulated into Rust-Oleum 769 Damp-Proof Red Primer—then applied to rusted test panels. Rust-Oleum's specially-processed fish oil vehicle was then traced through the rust to bare metal by Geiger Counter.

This penetration means rust-stopping power, because the fish oil vehicle works its way into the tiny pits in the metal where it drives out air and moisture that cause rust. Important savings are yours, because Rust-Oleum can be applied directly over sound rusted surfaces—usually eliminating costly surface preparations. Attach coupon to your business letterhead for your copy of the thirty-page report entitled, "The Development of a Method To Determine The Degree of Penetration of a Rust-Oleum Fish-Oil-Based Coating Into Rust On Steel Specimens," prepared by Battelle Memorial Institute technologists.



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reduce wear on
wheel flanges and rails
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STANDARD Rail and Flange Lubricants mean smoother, more economical railroading. Tests prove it.

One test which demonstrated the value of rail and flange lubricants was made on a 45.63 mile stretch of track in a Rocky Mountain state. There were 21.36 miles of curved track on the run. Average curvature was 6.13° . Total included angle was $6,924^\circ$. Elevation gain was 3,775 ft. Maximum grade was 2%. The same train of 32 cars and locomotive was used for the test runs which were made before and after the track was lubricated.

With track lubrication, the test disclosed, curve resistance was cut in half. About 96 feet of elevation were gained and an increase of 2.6% in tonnage rating was obtained.

Conclusions reached from this test were that, with track lubrication, substantial improvements in operating efficiency are possible. These can be utilized in three ways:

- 1 Tonnage hauled can be increased**
- 2 Train speed can be increased**
- 3 Fuel consumption can be reduced**

Still other tests have proved that curve rail and locomotive flange wheel life can be more than doubled through the use of rail and flange lubricants. And in terminal and yard operations in populated areas where quiet operation is important the noise-reducing effect of rail lubrication can mean better public relations.

Get in on these benefits. Get in touch with Standard Oil. Write or call, Railway Sales Department, Standard Oil Company, 910 S. Michigan Avenue, Chicago 80, Illinois.



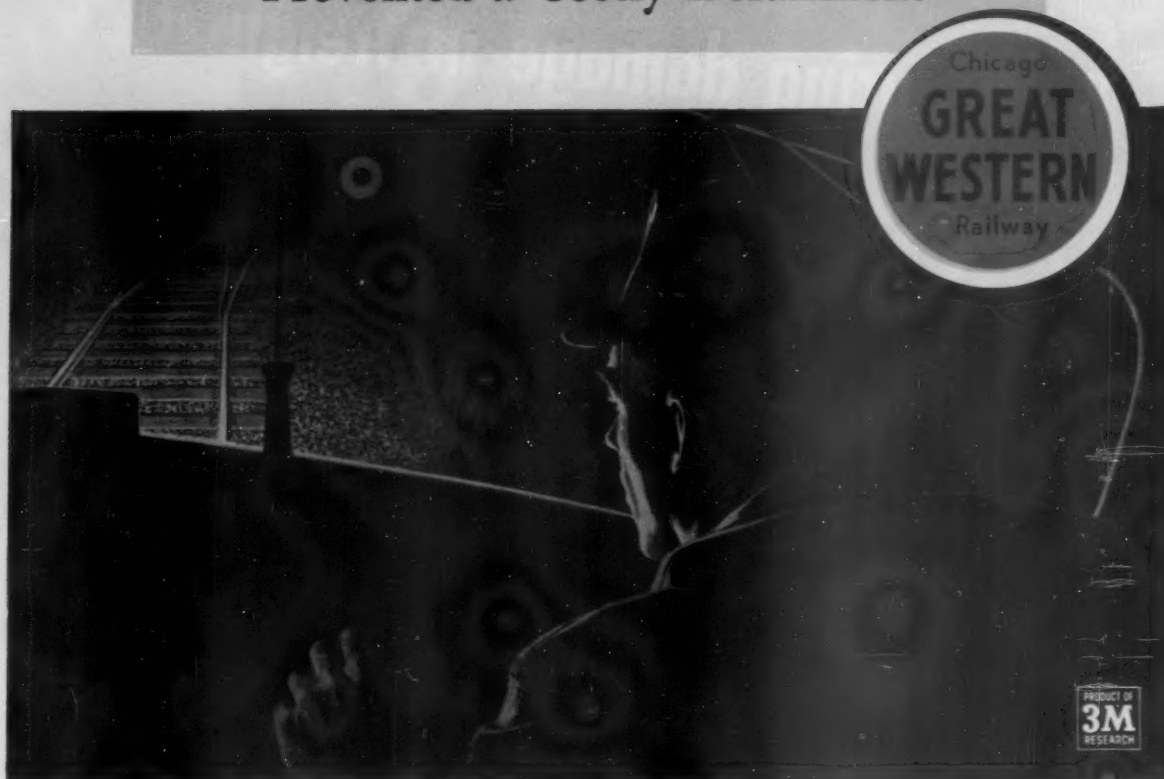
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- Give four to five miles of carry.
- Stay on the track. Won't wash off in wet weather. Won't run off in hot weather or solidify at low temperatures.
- Approved by all equipment manufacturers.

How the Chicago Great Western Prevented a Costly Derailment



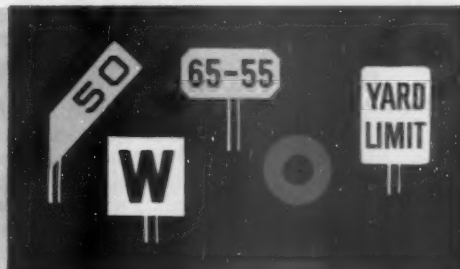
... with switch targets of "SCOTCHLITE" Reflective Sheeting

Through the dark night of January 7th, Chicago Great Western's passenger train No. 14—bound for Omaha—approached the Lyle, Minnesota stop crossing. In the beam of his headlight, the engineer spotted the vivid warning of a red switch target of "Scotchlite" Reflective Sheeting indicating that the switch was wrong. Immediately he applied his brakes in emergency. Result: only the forward trucks of the engine were derailed. Train 14 was on its way again with minimum delay.

Says E. T. Reidy, V.P. and General Manager of Chicago Great Western: "The diesel probably would have overturned if the engine hadn't picked up that reflectorized switch target."

Switch targets of "Scotchlite" Sheeting—as *visible by night as by day*—are far safer than painted targets. They are self-cleaning, give dependable all-weather protection... and years of low-cost, trouble-free service. For full details, write Dept. FQ-1156, Reflective Products Division, 3-M Company, St. Paul 6, Minnesota.

Signs of "SCOTCHLITE" Reflective Sheeting Give Safe 24 Hour Train Control



A Message to Management . . .

By reducing damage in freight cars . . .



Designed and constructed by Pullman Standard Car Manufacturing Co., P-S Nailable Steel Floor is built of 10-gage high-strength USS Con-TEN Steel formed into narrow planks with uniformly crimped and matching flanges. The sections, as illustrated, are fitted together to form a sturdy, wear-resistant and durable car floor that is well able to take concentrated wheel loads of lift trucks and heavy machinery. The special contoured nailing grooves located between each plank are designed for nail retention and sealing with use of flexible filler, and permit conventional bulkhead arrangement and lading blocking. The floor will retain its strength over years of service. (The filler also permits carrying fine bulk loads of all kinds.) Used principally for box cars, the P-S Nailable Steel Floor is finding use in gondolas and can be used to advantage for flat car floors as well.



USS COR-TEN Steel construction pays off BIG

Now, built with USS COR-TEN Steel The P-S Nailable Steel Floor offers important money-saving benefits both to shippers and operators

BY REDUCING THE LOSS and damage to freight in transit, and by decreasing damage claims, car repair expense and out-of-service time, the use of nailable steel flooring has proved its ability to cut operating costs not only for the railroads but for shippers and consignees as well.

As you know, defective floors and the damage they cause to lading in transit have for a long time been one of the most acute problems in respect to car performance.

In recent years this source of trouble and expense has been greatly augmented by the increasing use of power lift trucks in the loading and unloading of heavy products such as steel and machinery. Serious floor damage and even break-throughs have become more frequent. A stronger floor was definitely called for—one better than wood construction alone can provide. The nailable steel floor presented the answer.

Since its introduction six years ago, this type of flooring has been subject to sufficient experience to conclusively prove its value.

Its greater strength, tightness and nailability offer features that apparently meet all shipper loading requirements in a single car floor. Thus its use makes it possible to increase car availability, to simplify distribution and to reduce the number of cars required to handle a given volume of traffic.

As produced by Pullman Standard, the P-S Nailable Steel Floor combines these advantages with superior life expectancy and very low maintenance—due to the use of USS COR-TEN Steel in its construction.

In this floor, COR-TEN Steel's superior resistance to atmospheric corrosion—4 to 6 times that of carbon structural steel, its 50% higher yield point together with its good resistance to impact, battering and wear, pay off by keeping weight low and providing the necessary strength together with better durability.

These cost-cutting advantages inherent in COR-TEN Steel construction have been amply demonstrated in the 225,000 freight car bodies that have been built with this superior high-strength, low-alloy steel in the past 23 years.

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Improved cam plate design—plus a special gun with a greater foot-pound blow—result in substantially increased tamping speed. In some cases, double the former footage has been attained in spotting and with solidified ballast conditions. A new style retainer allows fast changing of tamping tools to fit any ballast condition. *Write for Bulletin AT-56.*

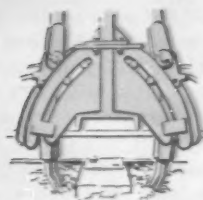
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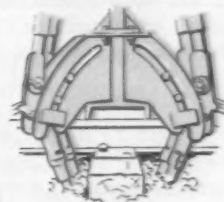
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The Engineer's Report

CASE HISTORY
RPM DeLo Oil R.R.
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Western Pacific R.R. Co.,
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Special oil maintains high average mileage record!



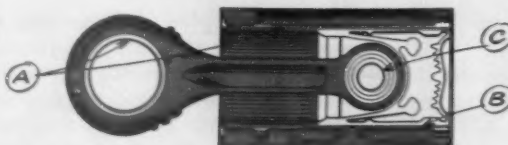
1776 CYLINDER ASSEMBLIES make up the 111 diesels in road freight service on the Western Pacific R.R. These units, as well as all passenger locomotives on the line, are lubricated with RPM DELO Oil R.R. Maintenance records of several years on freight locomotives show following average actual miles on parts removed for any reason: wristpins and bushings, 413,675 miles; pistons, 376,018 miles; liners, 354,101 miles. A representative assembly is shown in insert, just as it appeared after 476,497 actual freight miles. Note cleanliness of parts and free rings—typical of Western Pacific's experience with RPM DELO Oil R.R., the standard on the line since 1949.

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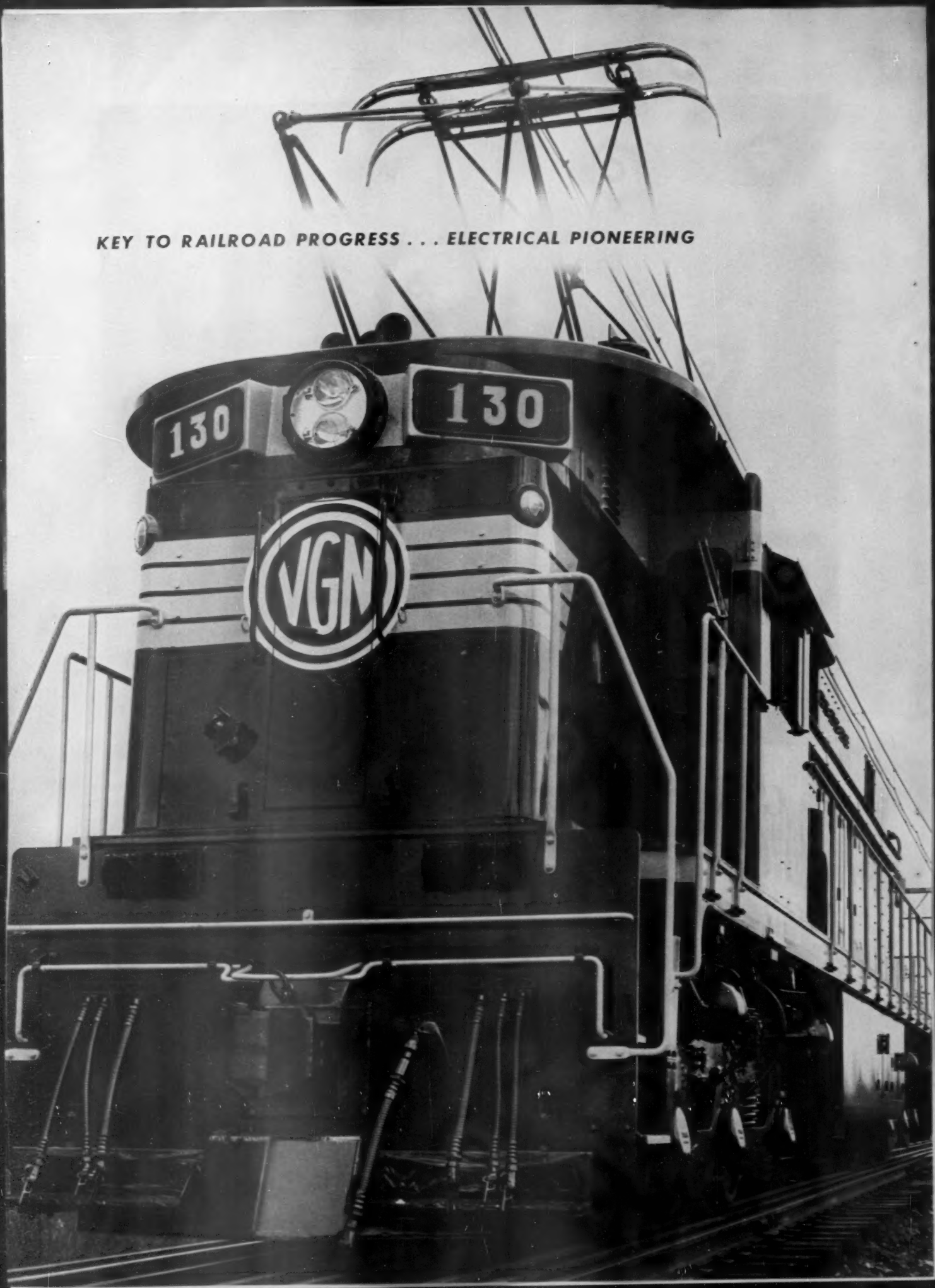
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KEY TO RAILROAD PROGRESS . . . ELECTRICAL PIONEERING



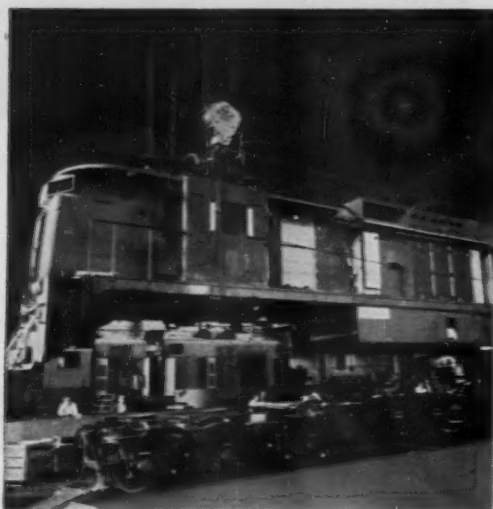
Virginian Railway Company Gets New General Electric Rectifier Locomotives Designed Specifically to Move Heavy Tonnage More Economically

Twelve new General Electric rectifier locomotives will soon be operating on the Virginian Railway. These locomotives, the first rectifier-electrics designed specifically for freight service, will develop 3300 hp, and boast a continuous tractive effort that will permit them to haul heavier freight trains economically.

As designed by G-E engineers, electrical equipment in the locomotive will convert high voltage A-C from the overhead wire to low voltage D-C

that will drive six G-E-752 traction motors. In combination with the power transformers, rectifier tubes form the heart of the conversion system.

For more information about these new electric locomotives, contact your G-E Apparatus Sales Office, or write Section 135-6, General Electric Company, Locomotive and Car Equipment Dept., Erie, Pa.



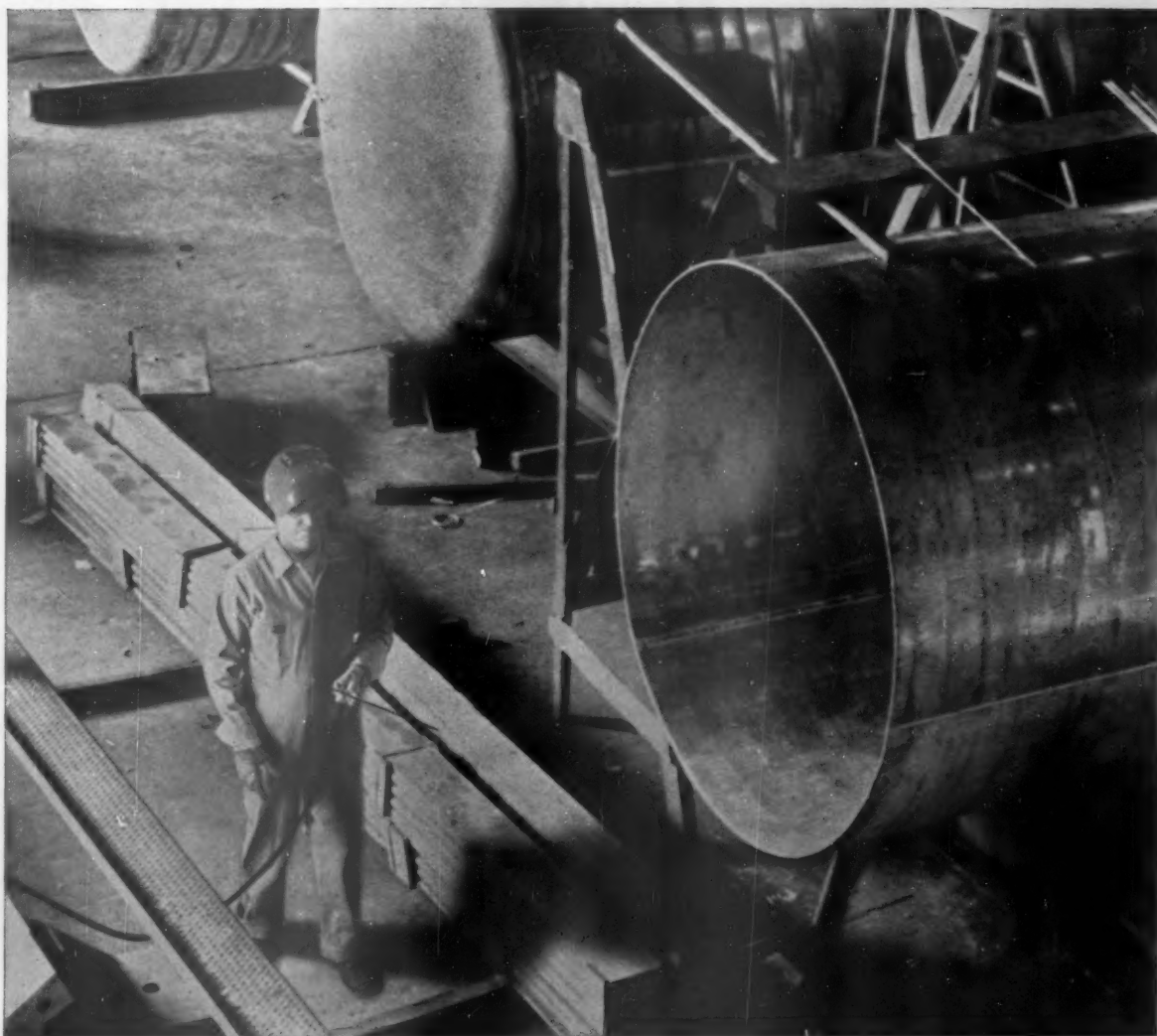
ENGINEERS AND WORKMEN at General Electric's Erie, Pa. Works stand by waiting signal for lowering of locomotive body onto the six-wheel trucks.



NEW VIRGINIAN RECTIFIER LOCOMOTIVE sees the sun for the first time on General Electric's test track. This locomotive will soon be operating between Mullins, W. Va., and Roanoke, Va.

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Tank cars take terrific punishment. That's why, like all equipment, they require periodical inspection and repairs to render the best possible service. In 30 car repair shops, strategically located throughout the United States, GATX tank cars receive this care—inspection, steam-cleaning, lubrication, tank testing, painting and general maintenance. The purpose of this "preventive medicine" is to keep GATX cars in service for longer periods—to give you maximum benefits from your GATX lease.

This service is part of every GATX lease . . . a lease that provides shippers with the most dependable service available for bulk liquid transportation. When you lease cars from General American, you avoid the need for capital investment as well as operating, servicing, and maintenance problems.

If you'd like additional information concerning the advantages of a GATX lease, call or write your nearby General American District Office.

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The Railroads' Political Job Still Lies Ahead

Regardless of which party wins the impending election—the railroads' problem of arousing popular and legislative support for needed changes in national policies toward transportation still falls in the category of unfinished business.

Neither of the leading candidates for President is, certainly, unfriendly toward the railroads. And, with equal certainty, neither of them has given any evidence that the railroad part of transportation is a matter of really primary concern to him.

President Eisenhower—by his appointment of the Committee on Transportation Policy—indicated that he has, at least, some sympathetic understanding of the situation of the common carrier part of the transportation business, including the railroads. Governor Stevenson, when he was chief executive of Illinois, gave evidence of willingness to stand up courageously against pressure group tactics by some of the transportation interests unfriendly to the railroads.

Moderate Support Not Enough

But the legislative reforms needed—if the railroads are to have a reasonable opportunity for future prosperity and growth—are not going to come easily, even if the Chief Executive gives them a moderate degree of support. Legislative action in an area of controversy seldom comes about without one or both of two strong factors in its support, either (1) inclusion in a program of "must" legislation by the executive department or (2) widespread and substantial support from a great many individual members of Congress.

Regardless of who is to be President during the next four years, it would be overoptimistic beyond reason to suppose that transportation legislation (e.g., of the kind recommended in the Cabinet Committee Report on Transportation Policy) is going to become the No. 1 priority item on any executive department list of "must" legislation. It follows, therefore, that a great deal of support from individual congressmen is indispensable.

To get the support of individual congressmen, these legislators will have to be convinced that a substantial number of their constituents are sincerely interested in the proposed legislation. Nobody can suppose that, as of the present moment, there exists the necessary degree of evidence of interest by constituents to convince any

very large number of congressmen that fundamental reform in national transportation policy is required. Railroad people—including employees (especially employees)—and other interests friendly to railroad transportation, will have to become much more active politically than they have so far.

Meantime, the militant trucking interests are certainly not politically quiescent. The newsletter "Human Events" recently reported that Dave Beck, head of the Teamsters Union, had come out for the Eisenhower ticket. The question was raised as to "what Dave got out of all this for himself." The answer was that, so far, he had got nothing—but that what he was seeking was "small business" financial assistance to various trucking concerns which "are having difficulty in competing with the railroads."

Labor Aid for Truckers

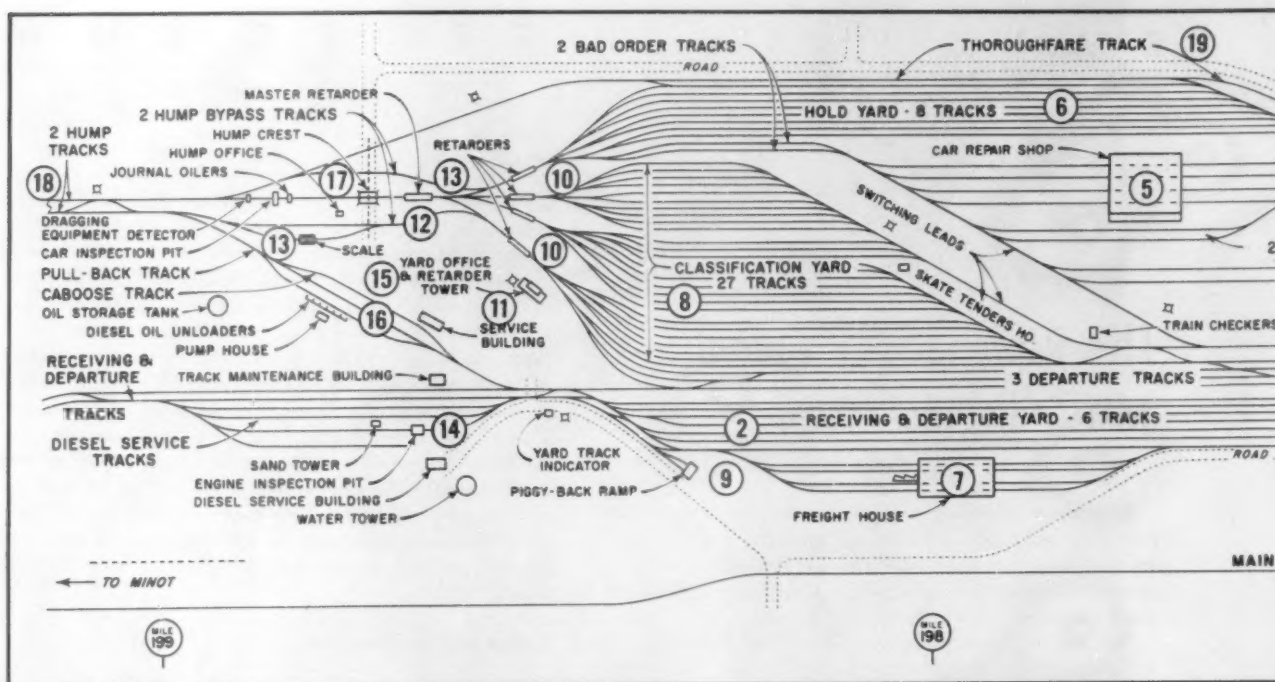
Whether this report of Mr. Beck's efforts in behalf of the trucking industry is accurate or not, it is certainly an observable fact about him that he is a strong political advocate of the interests of the trucking industry. Whatever anybody may think of Mr. Beck or his organization, no one will question that he concerns himself—not just with "labor legislation," but also in behalf of political action which will benefit truck drivers' employers.

Some of the railway leaders have expressed themselves strongly in favor of the kind of legislative and regulatory pattern which would enable the railroads to attract more traffic and enjoy greater prosperity. But have such legislative objectives been put forward by the railway labor people with the same zeal and effectiveness with which they support "labor legislation"?

From observation over a great many years of the loyal attitude of organized railroad employees toward their industry, it is our belief that these employees would exert themselves a great deal more actively and effectively in defense of their industry and their jobs, if they were given more spirited leadership. Such leadership usually has to originate at the top, but it really becomes effective only when it permeates down to the "grass roots." Such permeation usually doesn't come about automatically, but requires conscientious and effective organization—so far imperfectly realized.

One outstanding accomplishment of the past year is the more effective organization of railway suppliers, under experienced leadership. The coming months will doubtless see further accomplishment in this area. If all of the friends of sound governmental policies toward transportation—railroad labor, shippers, agricultural associations and advocates of private enterprise generally—were to organize themselves effectively and vigorously, to make their desires known to political leaders, transportation conditions would take a quick turn for the better.

"The harvest truly is great, but the laborers are few."



Automation Comes to Minot

Great Northern's new retarder classification yard features automatic switching and automatic retarder controls as well as loudspeaker systems and radio for yard communications in a \$6,500,000 facility

Considerable time is being saved by Great Northern freight trains between Seattle and St. Paul as a result of building a new retarder classification yard at Minot, N.D. This saving is due to faster classification at Minot and a reduction in switching at other yards.

For example, at such places as Seattle, Spokane and Havre east-bound cars are put into a train in any order for movement to Minot, thus saving classification work at these points. At Minot, the cars are blocked in station order for departing trains. Westbound symbol trains are blocked at Minneapolis, their forward cars are cut off at Minot for transferring contents, forward cars which have been transferred are added, properly classified, to the first westbound symbol train. All other westbound trains are classified at Minot. This more complete classification at Minot substantially reduces

switching done previously elsewhere.

The new gravity yard at Minot not only handles much more classification work than the previous flat yard, but does this work faster. Cars pass through the yard in an average of one hour less time. Thus on the whole, the new Minot yard (known as Gavin yard) directly or indirectly saves several hours on long-haul traffic, thereby improving service to shippers. And according to John M. Budd, president, the railroad hopes that savings in costs will be enough to pay for the new yard in 10 years.

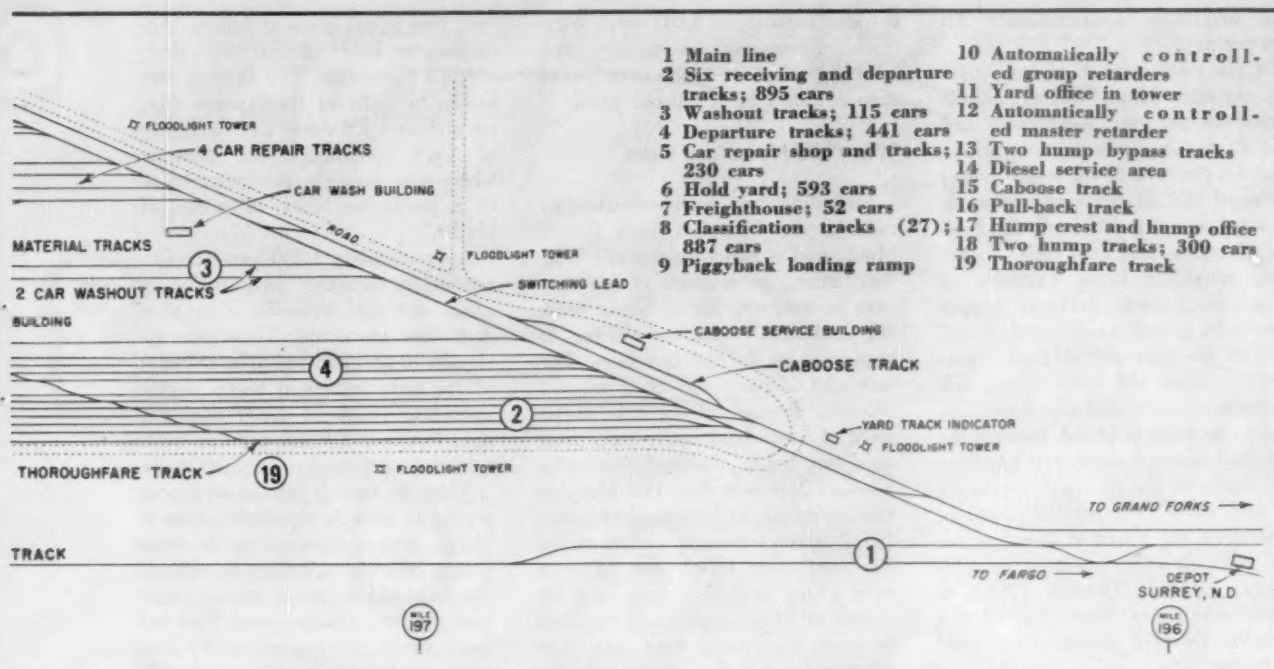
Why a New Yard at Minot?

A look at a map of the Great Northern system reveals that Minot is a natural location for a large classification yard, because it is the junction of two eastward main lines: one to the head of the Great Lakes at Duluth and Superior; and the

other southeast to Minneapolis and St. Paul. The main line extends westward to Spokane and on to Pacific Coast ports such as Seattle and Tacoma, Wash., and Vancouver, B.C.

Because of its location, Minot has always been an important division point for classifying trains, both east and westbound. The one flat yard was enlarged several times to its maximum capacity of 2,197 cars; which, although of sufficient size during the thirties, was not sufficient to handle cars without congestion during World War II and the Korean war. During these periods it was often necessary to set out east-bound grain and coal at points west of Minot, awaiting space in the yard.

The problem of yard space has been particularly acute since 1949, when the federal government made Minot a grain inspection point. Since that time anywhere from 300 to 500 cars of grain per day are handled



there, the cars being set out in a hold yard, where the wheat is inspected and samples are taken to go to the grain markets. Diversion orders for the cars are sent to Minot, the majority of them being moved to the principal grain markets: Du-

luth-Superior, St. Paul-Minneapolis and Sioux City, Iowa.

Lignite coal, mined in western North Dakota, is also held at Minot awaiting diversion orders depending upon market prices. This coal is generally marketed in towns in the

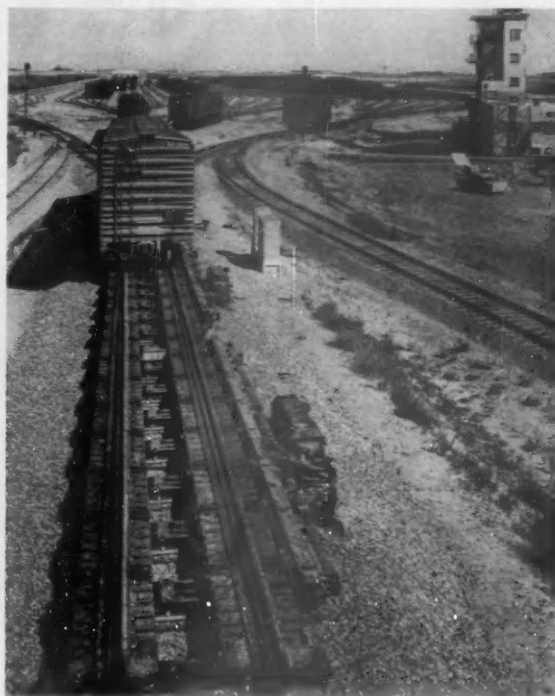
Red River Valley and in western Minnesota.

Coal traffic averages 200 cars per day.

About 75 cars of livestock are set out daily at Minot for feed, rest and watering. In addition, a local sales

LAP SWITCHES at head end of yard provide for maximum separation of cars in a minimum of space, furnishing more capacity on a classification track. Switches are equipped with Racor compressed air snow blowers including nozzles on the gage side of the stock rails.

AUTOMATION IN CLASSIFICATION begins here. The hump foreman "punches up" number of the track to which a car or cut of cars is to be routed. As car rolls down through retarders, it is automatically retarded rolling into its proper track at a non-accelerating speed and couples at 4 mph.



ring originates approximately 10 cars per day.

Of the total number of cars moving through Minot during a test period 49 per cent were eastbound and 51 per cent westbound. However, 76 per cent of the loads moved eastward and 24 per cent westward. This is because the heavy grain, lumber, livestock, and coal traffic moves east, requiring large numbers of empty box, stock, flat and hopper cars to be moved westbound.

With the increase in traffic, particularly since the Korean war, GN traffic studies revealed that something had to be done at Minot, because the old yard was not capable of handling the traffic at the efficiency necessary to meet today's competitive situation. Therefore, the board of directors, after studying other modern retarder yards, decided (October 1954) to spend over \$6,000,000 to build a new modern retarder classification yard at Minot.

The new Gavin yard, north of the east-west main line, is between Minot and Surrey, N. D. It has a total

working capacity of 3,445 cars. With trackage remaining in the old yard total capacity is 4,584 cars, more than double that of the old yard.

What the New Yard Does

Switching has been considerably reduced at Whitefish and Havre, Mont., and at Breckenridge and Willmar, Minn., as a result of blocking cars in station order at Gavin yard. All eastbound trains are blocked in station order for the two lines: Duluth (13 blocks) and St. Paul (12 blocks). Because of the large movement of westbound empty cars, these cars are being classified into nine blocks. Not only does this blocking save switching at intermediate yards, but it saves time and switching for the road train which sets off these cars. Also switching has been reduced at Minneapolis and St. Paul because eastbound cars are now blocked for specific connections—for example, CB&Q or M&STL.

Although in some yards a particular track is assigned for a block of

cars, this is not done at Minot. According to P. H. Johns, supervisor of yard operations, "by moving our blocks to different tracks each day, we maintain a fluidity and flexibility of yard operations not possible where you assign a particular track to a particular block or group of blocks."

Approximately 1,300 cars per day are being classified now, including grain and coal reclassification after diversions are made. These cars arrive in 10 to 12 trains. The capacity of the yard with one hump engine operating is about 2,400 cars per day. Westbound trains average 3,000 tons and eastbound trains 5,500 tons.

Thus to sum it up—a one hour saving in time in classifying cars at Minot, plus a time saving at other points because switching is reduced due to blocking cars in station order, plus the few minutes saved here and there where cars are set out by road trains, add to approximately six hours saved for freights between Seattle and St. Paul. Perhaps one of the most important contributions

Complete Yard Communications



YARDMASTER at communications center

Communications in Gavin yard include two-channel radio on three hump engines and four yard switch engines, as well as "intercom" and radio communications between the yardmaster, hump foreman, retarder operator, telegraph operator and three car inspectors at the hump.

In addition, 67 talk-back and 22 paging speakers throughout the yard are under the control of the yardmaster in his fifth-floor office. The hump foreman has a separate talk-back speaker system enabling him to

talk to the "pin puller." Another radio frequency is used for car inspection work, the car inspectors having walkie-talkies. Radio is to be used for car checking whereby the checkers use walkie-talkies, their voices being recorded in the yard office for transcription later.

An electronic equipment maintainer is provided with a radio shop for testing and repairing radio equipment. Bendix Radio division of Bendix Aviation Corporation furnished the radio equipment. The communications consoles, talk-back and paging speakers, amplifiers and relays were furnished by the Electronic Communication Equipment Company.

To provide telephone communications around Gavin yard and between the various offices, such as the car shop, freight house, yard office, a 100-line P-A-X phone system was installed. At present it is equipped to work 30 lines. This automatic dial telephone system is also connected with the Minot PBX. The P-A-X system with its dial telephone is made by the Automatic Electric Company.

As part of the communications installations, the GN has installed Teletype equipment for sending train consists from the yard. This includes the model 28 Teletype equipment, a feature being the use of the stunt box on the page printer. At present, yard clerks prepare the train consists in a tape and hard copy forms, the tape being given to the telegraph operator for transmission via direct circuits to Williston, N.D. and Breckenridge, Minn.



which Gavin yard promises is a substantial reduction in car-day delay. A conservative estimate of that saving is 61,150 car-days per year—a vital item in times of car shortage.

Design and general engineering of the yard was under the jurisdiction of R. R. Manion, former chief engineer, and supervised in the field

by C. F. Intlekofer, construction engineer.

Signal engineering was under the jurisdiction of R. A. Johnson, superintendent of signals, with work in the field directed by I. A. Iverslie, signal supervisor. A. H. Fox, superintendent of communications, has jurisdiction over the com-

munications work with C. H. Westman and L. H. McFadden, assistant superintendents of communications, directing the installation in the yard. The signaling equipment, including the retarders, electric switch machines, automatic switching and retarder controls, was supplied by the General Railway Signal Company.

Railroading

After Hours

Mechanize Head-end Loading?

J. B. Shores, public relations director of the T&P, tells me he's disturbed to note that mail and express is still handled into and out of head-end cars, one sack or package at a time. Some of the railroads' technological skill, he believes, ought to be focused onto this sector—both to save expense and reduce delays.

In our issues of June 2, 1952, and March 9, 1953, container handling of head-end traffic on the Frisco and Great Northern was described. Maybe there are other roads that have made some progress in this direction, but are not letting on. Anyhow, JBS certainly is right in his observation that "on an industry-wide scale" the loading and unloading of head-end traffic is still on the one-piece-at-a-time system.

Is there some very good reason for relative neglect of quantity-handling methods on this job? Is it, perhaps, another case of other demands on available funds having higher profit priority?

More About Zulus

C. E. Milne, transportation supervisor for the California P.U.C.—who

by
James G.
Lynn



Editor,
Railway
Age

went to railroading in 1914—believes he knows how "zulus" got their name. He writes that 40 and more years ago all the circuses had native Africans in their troupes on the circus trains.

The common term for these circus Africans was "zulus." Mr. Milne says that the appearance of homesteaders, after a week or so of travel in a box car, reminded trainmen of the zulus of the circus trains—hence they were given that label. A parallel explanation of the term comes from John L. Bickert of Winnipeg (a former RI train service employee at Herington, Kan., some 46 years ago).

Mr. Milne also tells of one of these homesteading zulus who was airing himself on top of his car while it was being switched. As the car passed several riders in the yard, each one of them called out: "Man on her!";

so none of them got aboard. Unfortunately for the zulu and his property, he hadn't learned to operate a hand-brake.

Engineer-Traffic Man

With the election of Harry Von Willer to the presidency of the Erie—there are now (at least) three railroad presidents with the unusual combination of an engineering education plus a professional career in the traffic department. The others (and, as far as I know, the only other) Class I railroad heads with a similar background are J. A. Fisher of the Reading and J. R. Coulter of the TP&W.

Engineering isn't usually considered as the special kind of education most needed by a traffic man. Nevertheless, there's certainly nothing inappropriate in it. As a non-engineer myself, I don't recall any occupation around a railroad—or hardly anywhere in the industry—which seems out of bounds for an engineer. This doesn't mean, of course, that engineering is the only skill that is useful. I know of one case where a mechanical engineer, working as such, also acquired accounting, becoming a CPA.

Mechanical Reefers Keep Running

Shops, shop equipment and shopping schedules are being laid out to insure success and progress of one of the fastest growing freight operations

When the first mechanical reefers went into Burlington Refrigerator Express-Fruit Growers Express-Western Fruit Express service, it was recognized that power and refrigeration equipment would eventually require complete rebuilding. How soon this should be done was a question that even the manufacturers couldn't answer. To the credit of the equipment design and because of the maintenance it has received, this is a question which remains unanswered today.

The builder of the diesel engine had estimated that this power plant, mounted in a freight car and subject to the variable loads and service conditions imposed by railroad service while operating unattended, might be due for overhaul after 10,000 hours of service. Therefore, when one of the early mechanical cars reached 8,000 service hours, it was shopped and the engine was torn

down and measured to determine the wear.

Since almost no wear had occurred, the engine was reassembled and went back into service. Another car was inspected when it had accumulated 9,000 service hours and was found in good condition. This has progressed until today cars with between 17,000 and 18,000 accumulated hours are being inspected, and still are showing little wear. However, some of these units are now being rebuilt to modernize them and to spread a shopping load which eventually must come. It appears that these cars can log more than 20,000 hours before power plants must be shopped.

Fruit Growers Express already has set up its shop for the heavy overhaul program. It is located at Jacksonville and is being equipped and arranged to handle the power plants and refrigeration units on the 1,001

cars which the associated companies operate today. Repairs are handled on a unit exchange basis with a stock of spare assemblies maintained for each of the major components. Installations of engine-generators, compressors, and condensers have been designed so that they can be removed and replacements installed with a fork lift truck.

The fact that a general overhaul schedule has not been established does not mean that none of the units has yet been removed. This fleet has had the usual occasional condenser and radiator leaks, fan failures, and leaking oil seals. Such work is handled daily in the Jacksonville shop and in a smaller shop at Baldwin, Fla. The Baldwin set-up is similar to that at Jacksonville except that engines are not rebuilt. These units are trucked from Jacksonville when required.

The scheduled maintenance pro-



SHOP AT JACKSONVILLE is equipped for making all types of repairs to mechanical refrigeration equipment. It is next to tracks where both routine servicing and repairs are done.

FORK LIFT TRUCK is used to remove diesel-alternator from early-model mechanical car. Basic units are all designed to be handled in this way.



gram established so far has been a factor in the excellent performance of these mechanical cars.* The BRE-FGE-WFE program does not yet call for the removal of any major components. The engine water pump is removed and rebuilt after 5,000 hours. Because the engines operate unattended, and because failure of a cooling system could ruin lading worth many thousands of dollars, critical parts are removed and scrapped at arbitrary periods with no attempt to extend their service life.

At 750 hours engine oil and oil filter are changed. At 5,000 hours all belts and coolant hoses are renewed and the old ones are scrapped. At 10,000 hours flexible fuel lines and engine injectors are replaced, even though inspection might indicate they could operate longer.

Almost no attempt is made to reclaim parts. Injectors removed from an engine are rebuilt with new components, but no attempt is made to build up worn components. Batteries are removed and scrapped any time there is evidence that they are not maintaining their ability to take charging and when they then fail a break-down test.

Set Up for Fast Action

The Jacksonville shop has a large work area equipped with benches, tools and tool boards, crane, and racks on which rebuilt equipment is stored awaiting application. There is an office where records on the various cars are maintained. There is a stock room for the large inventory of spare parts for this car fleet. Outside the building is a solvent cleaning installation with crane equipment to handle parts and assemblies in and out of the tanks.

This shop is adjacent to the tracks on which both the pre-trip maintenance and the heavy repairs are done. When the ACL places cars, it is usually not known what work will be required. They are switched in only because they are empty and southbound. Even when there are major repairs made, many cars are able to move out the same day.

Some practices have been fixed. There is no shopping of refrigeration compressors except in cases of

*The cars now going into service were described in *Railway Age*, Aug. 27, p. 24. Operating techniques were outlined in the Oct. 1 issue, p. 22.

HOW BIG IS THE MECHANICAL REFRIGERATOR FIELD?



J. C. RILL

This statement is by J. C. Rill—president of the associated Burlington Refrigerator Express, Fruit Growers Express and Western Fruit Express, who assumed this post in 1948. His previous experience had been with the Pennsylvania, where he started in 1910. From 1931 to 1935 he was general manager of the PRR's Western Region, and from 1935 to 1948 he was the Pennsylvania's chief of freight transportation.

In that position he maintained close liaison with the BRE-FGE-WFE operation. Fruit Growers Express is responsible for the Pennsy's refrigerator car requirements and for its perishable protective services.

Upon becoming president of the refrigerator car lines, Mr. Rill became actively interested in the mechanical refrigerator car. During the past eight years the associated refrigerator lines have built up a fleet of 1,001 mechanical refrigerator cars and 279 more are on order. In this statement for *Railway Age*, Mr. Rill gives the present scope and future prospects of this expanding operation.

The mechanical refrigerator cars pioneered and developed by FGE, WFE, and BRE are successfully answering the demand of shippers of frozen foods for dependable, low-temperature, in-transit refrigeration.

Our associated companies contract with some seventy railroads for their requirements of refrigerator cars and protective services. Our goal is to furnish mechanical refrigerator cars for all shipments of frozen foods originating on our contract lines. While the frozen food industry is growing at a tremendous rate, we are fast approaching the achievement of that goal. We plan to keep up with the growth of the frozen food industry.

Although the present supply of mechanical refrigerator cars is required almost exclusively for frozen foods, research and development to make the car a satisfactory vehicle for all types of perishable commodities have been an important part of the FGE-WFE-BRE program. Practically all types of fresh commodities have been satisfactorily transported in our "all-purpose" cars.

We do not feel that the ultimate in mechanical refrigeration has been reached or that the mechanical refrigerator car development job is completed. The future of this development program depends to a great extent upon justification from the standpoint of use of the mechanical refrigerator cars. We feel that the record to date justifies the confidence placed in the program.

failure. The entire refrigerating system, including compressors, condensers, evaporators, refrigerant lines, and related equipment, is never taken off the car except when there are leaks. When it is necessary to do this, the system is recharged with freon only after it has been evacuated and dehydrated on the car.

The BRE-FGE-WFE organization has found that premium fuel and lubricating oils have their part in the performance which has been obtained. Because of the wide temperature extremes through which these cars operate, they are always fueled with No. 1 grade fuel oil. With it they can successfully operate at

temperatures down to 30 deg below zero. The year around, SAE 30, high-detergent lubricating oil is used. The engine cooling system is permanently filled with a 50-50 ethylene glycol antifreeze solution. Compressors are always lubricated with No. 6 Ansul oil.

The organizations, programs, designs, equipment and materials established for this relatively new operation have produced results which have not only satisfied the BRE-FGE-WFE management, but more important, are increasingly popular with shippers and consignees. Mechanical refrigeration is holding and winning traffic for the railroads.



PHOTO-MAP used for reconnaissance and planning route location in vicinity of Nine Mile creek. The map is a mosaic of a number of aerial photographs made to scale.

To Make Location Maps:

Surveying by aerial photography saves time and money in the location of a railroad through rugged Minnesota wilderness

The Erie Mining Company had to develop the location for a railroad through a wilderness in northern Minnesota. This heavy-duty line had to haul 13,000-ton trains, at high speed, in one direction with a ruling grade of 0.3 per cent.

This railroad's function would be to transport taconite from a production plant at Hoyt Lakes, Minn., 61 air miles to a port to be built on Lake Superior. There the ore would be loaded in lake vessels for movement to lower lake ports serving the furnaces where the taconite is converted to steel.

The general route was almost east-west in direction, crossing a ridge with changes in elevation up to several hundred feet. The drop to the lake front is 820 ft. There are few

roads in the area, most of which is covered by tamarack and cedar swamps separated by brush and heavy tree growth. These conditions and the general remoteness of the area made it practically impossible to conduct a ground reconnaissance survey to guide the engineers in developing a route with grades and alinement meeting the requirements.

Faster Methods

A tentative harbor site was selected, and from this point, named Taconite Harbor, the location was developed by use of aerial surveys and photogrammetric techniques. Substantial savings in time and manpower were realized, as compared to traditional ground survey methods.

Pickands Mather & Co., managers of the project for Erie Mining, engaged Aero Service Corporation of Philadelphia to do the photogrammetric mapping and to aid in the selection of possible routes and the location of the final route. Its field survey parties were also used to stake the center line of the final route.

The first step in the mapping operation was to obtain high altitude photographs covering a route strip six miles wide, extending between the proposed taconite plant and the harbor site. The scale of these pictures was 1:40,000; the survey plane's flight altitude was 20,000 feet.

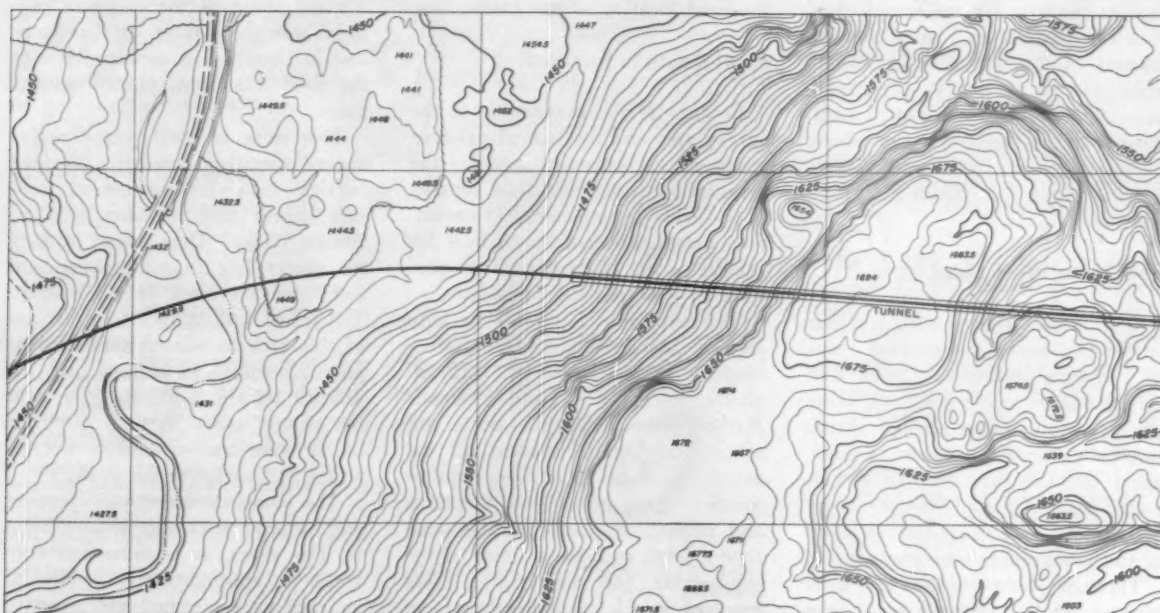
These reconnaissance photos were assembled in a controlled photo-mo-
(Continued on page 42)



CONTOUR MAP, compiled by photogrammetric methods, shows topography by 25-ft contours. Maps with such

contours are used for reconnaissance and planning route location. Map shows area in photograph center.

Go Up 20,000 Ft.



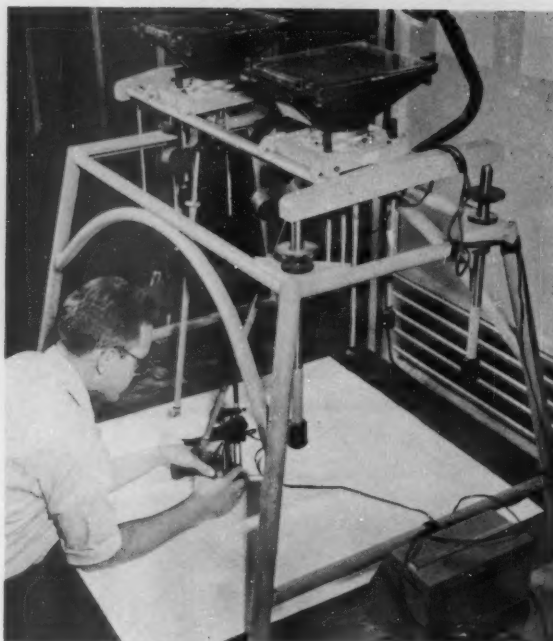
FINAL ROUTE location is made with the aid of contour maps with a 5-ft interval, also made by photogrammetric

methods. This map, made to larger scale, shows only a small area of the map with 25-ft contours.



▲ **SURVEY PLANE** and crew which made the aerial photographs.

CONTOURS and other data are transferred from aerial photographs to manuscript by a Kelsh Stereo Plotter. Method utilizes corresponding field control points on the photographs and the manuscript. ►



(Continued from page 40)

saic or photo-map. While this photo-map did not show elevations, its horizontal positions were correct. It did show in detail the location of swamps and ridges, as well as variations in density and types of timber. This in turn provided useful clues to the soil conditions to be expected.

These overlapping air photos were used as the base for the compilation of a topographic map at a contour interval of 25 ft and a horizontal scale of 1 in. to 800 ft. This map gave the railroad engineers some concept of the topographic problems confronting them in the area, affecting the plans for alinement, grade and route.

How Maps Were Used

Several trial routes were laid out on the photo-map and contour maps by Pickands Mather engineers. The air photos covering each of these projected routes were studied stereoscopically. Several routes were eliminated through this detailed stereoscopic inspection and interpretation, carried out with frequent reference to the topographic and photo-maps.

Through these studies the final location of the railroad route was narrowed to a route strip approximately a mile wide. New aerial pho-

tography of the strip was carried out at a scale of 1:12,000. From these photos were compiled maps at a 5-ft contour interval, with a scale of 1 in. to 200 ft.

Aero Service engineers next established 450 horizontal and vertical control points in the field, using precise theodolites. Of these points 220 were monumented for further use in the final location of the center line.

Final Route Is Selected

Because of the remoteness of the survey area and the lack of passable roads, a helicopter was used for the transportation and logistical support of the field survey parties. The essential control was established in a far shorter period of time than was possible by conventional methods.

The maps with 5-ft contours were studied, along with detailed stereoscopic examination of the 1:12,000 photos of the area, and Pickands Mather designated a final route and center line which satisfied all the construction and operating requirements of grade, alinement, structures and related problems. At the same time a final, realistic estimate of the engineering and construction costs involved could be made, based on specifications including 140-lb rail with creosoted ties and stone ballast.

For the compilation of all the maps Aero used Kelsh Stereo Plotters. These precision instruments project the overlapping aerial photographs stereoscopically onto a manuscript. Corresponding field control points are established on both the aerial photographs and manuscripts to ensure accurate transfer and plotting of data prior to the final drafting.

Final phase of the mapping program was the staking of the center line in the field in conformity with the final alinement, plotted on the maps.

This work in itself was a major survey operation, involving 20 Aero Service men—instrumentmen, rodmen, brush men, axemen, and, of course, cooks. They began staking the center line in midsummer and completed the work in six months. The below zero temperatures typical of this area in winter were used to great advantage in working over the difficult terrain, particularly around the swamp areas. A path generally 20 ft wide was cleared to set all stakes and complete the work.

The complete surveying, mapping and location work was accomplished in 1½ years, so construction contracts for approximately 75 miles of railroad were executed and in active progress less than two years after the date of the original planning.

(Continued from page 13)

Coast sales representative, at San Francisco.

George S. Goodwin, recently retired chief of the motive power branch, Transportation Research & Development Command, Ft. Eustis, Va., has joined **Robert W. Hunt Company** as inspector, with headquarters at Chicago.

W. C. Shea, director of sales, **Colson Corporation**, has been named assistant to vice-president, sales. **D. F. Adams**, who previously directed sales of industrial products, is now sales manager.

Financial

New York Central.—Disbursing its U. S. Freight Stock.—NYC directors have declared a dividend in United States Freight Company stock equivalent to \$1.33 a share on the basis of the October 29 New York Stock Exchange closing price for U. S. Freight. The dividend—payable December 20 to stockholders of record November 16—is in lieu of the NYC's regular quarterly dividend of 50¢ a share.

One U. S. Freight share will be distributed for each 21 shares of NYC stock, with fractional differences being paid in cash. The distribution will completely eliminate the railroad's stock interest in the freight forwarding company.

Robert R. Young, NYC chairman, said that the railroad's ownership of a large percentage of U. S. Freight's outstanding stock had created a conflict of interest between the two companies' positions in the transportation industry, thus handicapping the freight forwarder's plans to expand.

Dividends Declared

ATLANTA & WEST POINT.—Common, \$2, payable December 20 to holders of record December 10; preferred, \$1.06, quarterly, payable January 2, 1957 to holders of record December 7.

LEHIGH VALLEY.—30c, quarterly, payable November 20 to holders of record November 2.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—\$1, quarterly, payable December 1 to holders of record November 8.

NEW YORK CENTRAL.—Declared dividend—in stock of United States Freight Company—equivalent to \$1.33 per share on the basis of October 29 New York Stock Exchange closing price for U. S. Freight, in lieu of NYC's regular quarterly dividend of 50 cents a share, payable December 20 to holders of record November 16.

NORFOLK & WESTERN.—90c, increased quarterly; 60c, extra; both payable December 10 to holders of record November 13.

PENNSYLVANIA.—35c, quarterly; 25c, extra; both payable December 10 to holders of record November 5.

READING.—4% non-cumulative 1st preferred, 50c, quarterly, payable December 13 to holders of record November 22.

SOUTHERN.—Common, 50c, quarterly; 5% non-cumulative preferred, 25c, quarterly; both payable December 14 to holders of record November 15.

Railway Officers

ATLANTIC & DANVILLE.—**Eugene M. Milner** appointed general agent, Atlanta, Ga., succeeding **John V. Benson**, promoted to general freight agent, New York. Mr. Milner was formerly commercial agent of the **Georgia & Florida**.

BESSEMER & LAKE ERIE—TENNESSEE, ALABAMA & GEORGIA.—**Edward E. Van Schaick**, assistant trainmaster, Erie, in charge of the Ford operations at Mahwah, N. J., has resigned to become a member of **Railway Sales and Service**, representing the B&LE and TA&G in New Jersey and Connecticut with selected calls in New York.

BURLINGTON.—**E. C. Osmondson**, office manager, purchasing-stores department, Chicago, appointed assistant purchasing agent, Portland, Ore., to replace **Steven Pentek**, named purchasing agent, **Colorado & Southern** and **Fort Worth & Denver**.

CANADIAN NATIONAL.—**John Cunningham** appointed regional treasurer, Atlantic region, Moncton, N. B., succeeding **Leonard Barnes**, on special duty, accounting department, Toronto, Ont.

H. L. Slater, assistant comptroller, revenues, Montreal, appointed assistant comptroller, general, at that point and has been succeeded by **L. J. Mills**. **Ian Macaskill**, regional auditor, Toronto, appointed assistant comptroller, disbursements, Montreal, and has been succeeded by **R. F. McCharles**, administrative assistant, Montreal. **C. H. Fay** appointed auditor of construction, Montreal, succeeding **O. H. Lansing**, retired. **A. H. Hogan**, auditor of disbursements, Montreal, appointed auditor of joint facilities there. **J. E. Brennan**, general accountant, Mon-

tréal, appointed chief accountant—revenues, at that point.

John A. Walsh, district car foreman, appointed assistant superintendent of car equipment, Newfoundland district, St. John's, Nfld. **J. Edmund Richard**, district car foreman, Moncton, appointed assistant superintendent of car equipment there.

Ernest J. Feasey, supervisor of diesel equipment, Montreal, retired.



John Cunningham

George J. Foliot named superintendent of CN Telegraphs, Montreal, succeeding **M. L. Prentice**, transferred to Toronto. **Walter A. Brundage** appointed traffic supervisor, telegraphs, Maritime Provinces, succeeding **James F. Lounder**, named plant supervisor at St. John's.

CHESAPEAKE & OHIO.—**William Idsardi**, copy editor for the "Cleveland Plain Dealer," named assistant manager, news division, C&O. **William J. Girgash**, assistant state editor of the "Akron (Ohio) Beacon Journal," appointed assistant editor of "Tracks," C&O magazine.

COLORADO & SOUTHERN-FORT WORTH & DENVER.—**Hal D. Foster**, purchasing agent, Denver, retired November 1. His successor is **Steven Pentek**, assistant purchasing agent, **Burlington**, Portland, Ore.

DETROIT, TOLEDO & IRONTON.—**J. W. Donahue** appointed assistant comptroller, and **R. C. Courtney** named assistant to comptroller.

ERIE.—**William E. Godfrey**, assistant trainmaster, Jersey City, N. J., promoted to trainmaster, Susquehanna division, Hornell, N. Y., succeeding **Charles H. Zimmerman**, transferred to the Susquehanna and Tioga divisions at Susquehanna, Pa. **Lester E. Isham**, road foreman of engines, Buffalo and Rochester divisions, appointed trainmaster—road foreman of engines, Kent, Ohio.

FRISCO.—**L. C. Dickinson**, assistant general storekeeper, Spring-
(Continued on page 46)



BALTIMORE & OHIO.—**T. E. Johnson**, assistant to general manager, Central Region, Pittsburgh, Pa., promoted to assistant general superintendent of transportation, Baltimore, a newly created position.



BEFORE This 44-ton G-E locomotive was hit by a loaded 20-ton sand truck. A G-E Rebuild Specialist makes

a detailed check of the damage prior to starting rebuild operations in General Electric's Locomotive Rebuild Center, Erie, Pa.

How General Electric's Rebuild Service

Recently, a short-line railroad owner wanted his wrecked locomotive rebuilt and back on the road as soon as possible and at a reasonable cost. Complete dependability after rebuild was also an important factor since the road owned only a few locomotives. He decided to use General Electric's Locomotive Rebuild Service.

The locomotive, a G-E 44-tonner, had been hit by a 20-ton truck loaded with sand. There was extensive structural damage and sand from the collision had entered many of the locomotive's precision-running parts.

The locomotive was completely disassembled. Struc-

tural damage was repaired. Every moving part was carefully cleaned and inspected. All damaged pieces were either rebuilt to factory specifications or were replaced with brand-new G-E parts.

Only five weeks after the 44-tonner arrived in Erie, it was ready to be returned to the customer. It looked and operated like new with a new locomotive warranty. The cost—only a fraction as much as replacement with a new locomotive.

Your G-E diesel-electric rebuild requirements may never include rebuilding a wreck. But this is only one



AFTER Only five weeks later, the same locomotive is literally "as good as new." The rebuilding cost was only 30%

of the replacement value of the damaged locomotive, and General Electric backed up their work with a new locomotive warranty.

Gave This Wreck New Life in Only 5 Weeks

small phase of G.E.'s Rebuild Center operations. Your work-worn G-E locomotives can be given new life and brought up to the most modern standards of performance and economical maintenance through G.E.'s popular rebuild service.

Contact your nearest G-E Apparatus Sales Office for complete Overhaul-Rebuild information. A G-E engineer will be glad to give you an estimate, at no cost or obligation. General Electric Company, Locomotive and Car Equipment Department, Erie, Pa.

128-29

Progress Is Our Most Important Product

GENERAL  ELECTRIC



Green light for revenue traffic — when D Tournapull maintains right-of-way!

When your right-of-way earthmoving for maintenance and construction is handled by 138 hp, 29.5 mph, 9½-yard D Tournapull, you don't have to worry about work trains. You have no slow orders, no reshuffling and delaying of revenue traffic, no sidetracking.

Rubber-tired Tournapull is a fast-moving off-track tool...travels to most jobs via highway...does most of its work off-track. Even when traveling or spreading ballast on main line tracks, this mobile handyman can get out of the way in a hurry if freight or passenger trains approach. Big, low-pressure tires won't damage tracks or switches, won't chamfer ties.

One man — one machine

This one-man operated handyman "D" loads, hauls, and spreads dirt or ballast wherever you want it...needs no work train, work crew, or auxiliary tools. It travels between assignments by highway or right-of-way. There's no waiting for haul equipment, no wasted work-

time while crews move work trains into and out of sidings.

D 'Pull is highly maneuverable. Working in narrow quarters, this mobile maintenance tool turns in a space less than its own length.

Big blade for dozer work

With 8'1" wide dozer blade, this Handyman handles light bulldozing for added utility. For winter clean-up, dozer blade can be replaced with V-snowplow.

On scraper work, "D's" can self-load 5 yards or more of bank material. If desired, 2 or more "D's" can work together, push-loading one another for bigger loads and even better production. Or any tractor or motor grader can be used as a pusher, for heaping loads on heavy-yardage jobs where big production is needed, on a tight schedule.

Why not get the complete facts on mobile, versatile D Handyman? Ask us for complete specifications and on-the-job performance reports.

Tournapull—Trademark Reg. U.S. Pat. Off. DP-1158-RR-z



LeTourneau-WESTINGHOUSE Company

Railroad Sales Division
Peoria, Illinois

A Subsidiary of Westinghouse Air Brake Company



PITTSBURGH & WEST VIRGINIA.—W. K. Kearns named construction engineer, Pittsburgh, Pa. Mr. Kearns was formerly supervisor track, Pennsylvania, Logansport, Ind.

(Continued from page 43)

field, Mo., appointed general storekeeper there.

W. T. Bryan appointed terminal trainmaster, Memphis, Tenn.

GRAND TRUNK WESTERN.—W. J. Malone, designing engineer, named office engineer, Detroit, Mich.

LEHIGH & NEW ENGLAND.—H. L. Albert elected vice-president—traffic, Bethlehem, Pa. Position of general traffic manager, formerly held by Mr. Albert, abolished.

NORFOLK SOUTHERN.—C. C. Spencer, general auditor, Norfolk, Va., elected assistant comptroller there.

RUTLAND.—J. K. Roberts appointed assistant treasurer, Rutland, Vt., succeeding J. E. Hayward, retired. Mr. Roberts will continue as chief clerk, executive office.

SANTA FE.—K. C. May, trainmaster, Plains division, Amarillo, Tex., appointed superintendent, Panhandle division, Wellington, Kan., succeeding R. W. Prentice, who retired October 1. J. M. Watkins named to succeed Mr. May.

L. A. Havener named division freight agent, Long Beach, Cal., replacing E. G. Stubbs appointed assistant general freight agent, San Diego, Cal., to succeed Walter M. Krames, who retired September 30.

G. B. Stearns, valuation engineer, Coast Lines, Los Angeles, retired October 1 and has been succeeded by M. W. Anderson.

Flory Mauriocourt, assistant to general auditor, named acting auditor, Topeka, Kan., to succeed the late Dale McGrath.

SAVANNAH & ATLANTA.—Warner R. Wilson appointed assistant freight traffic manager, Savannah, Ga. Mr. Wilson formerly held a

similar position on the Central of Georgia at Savannah.

SEABOARD.—S. J. Jarrell named assistant to chief mechanical officer, Norfolk, Va. He was formerly on the staff of the comptroller in charge of special studies.

TEXAS & NEW ORLEANS.—B. A. Archer, trainmaster, Lafayette, La., has resigned due to ill health, and position abolished. Headquarters of A. J. Rini, trainmaster, transferred from New Orleans to Lake Charles, La. J. U. Tate, Jr. appointed trainmaster, Glidden, Tex.

UNION PACIFIC.—F. L. Watson appointed assistant general storekeeper, Pocatello, Ida., and E. L. Cochran named division storekeeper, Cheyenne, Wyo.

John A. Bunjer, district engineer in charge of the eastern district, Omaha, appointed chief engineer there, succeeding William C. Perkins, re-



John A. Bunjer

tired. Mr. Bunjer's successor is Paul G. Martin, division engineer, Kansas City, Mo., who in turn is replaced by Warren R. Tyler, resident engineer, Omaha.

A. L. McDermott, yardmaster, Portland, Ore., appointed terminal superintendent, Albina yards, Portland. Jack F. Chapman, yardmaster, Portland, and Harold E. Sipes, yardmaster, Seattle, appointed to the newly created positions of assistant terminal superintendents at Albina.

OBITUARY

Emmet Trainor, 64, retired general attorney of the Santa Fe, Chicago, died October 23 at Michigan City, Ind.

Lawrence J. Verbarq, formerly assistant to chief mechanical officer, Missouri Pacific, died October 1 at his home in University City, Mo. Mr. Verbarq for many years was an important contributor to the work of the Electrical Section, Association of American Railroads, and to its predecessors.



Your freight yard tangle: Straighten it out -- with SwitchMobile

With business at a high level these days, activity in freight yards and sidings is also at a peak. There are more freight cars on your sidings than ever before — and more of them are in motion. Your switch engines are busy — maneuvering to spot cars as needed, positioning as fast as they can on a crowded, complicated track network. But they lose a lot of time waiting for clearance on main lines, switching out and putting back cars that interfere with the needed spotting.

You can solve this problem with a SwitchMobile — the new LeTourneau-Westinghouse rubber-tired switcher with 16 mph go-anywhere mobility for off-track or on-track travel. Switch-Mobile can cut directly across yards, fields, ditches, or travel by highways and streets to next assignment.

Go-anywhere mobility

Big, low-pressure tires, 5½' high, 2' wide, make it possible for this switcher to go anywhere. Tracks, right-of-way, pavement, black-top are routes — not obstacles — to Switch-Mobile. Rig handles easily in traffic — in freight-yard or city street.

Twice the traction of steel wheels

208 hp diesel engine, through torque converter and constant-mesh transmission, provides power for pushing or pulling strings of cars. Big, rubber-tired wheels straddle rails, ride on

ballast and tie ends. They give a 60 percent coefficient of friction — double the tractive effort of steel-wheeled switchers rolling on smooth steel rails. Machine exerts 36,000 pounds of rim-pull on load... can roll 1,250 tons of freight from a dead start. Couplers slide 35" left or right.

Tailored to RR requirements

SwitchMobile is not merely an automotive vehicle adapted to rail work. It's a genuine railroad switcher, designed and equipped for full yard service. It has locomotive-type operator's cab... air hoses and couplers at both ends. Hand rails, steps — all meet ICC specifications.

Air to operate brakes on SwitchMobile, and on freight cars coupled to it, comes from a 33-cu. ft. LeRoi-Westinghouse compressor. This unit supplies two 10.5-cu. ft. reservoirs — one for regular use, one a reserve tank for emergencies.

Operator works in big, roomy, stand-up height cab. There's a seat on either side, one facing front, the other to the rear. Operator has 180° vision both ways. Single set of simple controls turns on center post, swings in half circle to either operating position.

Get all the facts

For fast yard-switching service... for ample car-handling power with rubber-tired off-track mobility... investigate SwitchMobile. Ask for specifications.

SwitchMobile—Trademark SM-1138-RR-z



LeTourneau-WESTINGHOUSE Company

Railroad Sales Division
Peoria, Illinois

A Subsidiary of Westinghouse Air Brake Company



SYMBOL OF DURABILITY



...outlasts **ALL** other insulating materials!

The installation of Streamlite HAIRINSUL into new refrigerator cars is a one-time investment, because it outlasts the life of the car, and can be used again and again.

The successful use of all-hair HAIRINSUL in refrigerator cars for half a century is the best testimony that service conditions never impair its high insulating efficiency.

Some of the major reasons why Streamlite HAIRINSUL is specified by leading refrigerator car lines are given at the right. Write for complete data.

AMERICAN HAIR & FELT COMPANY
Merchandise Mart • Chicago, Illinois

- **LOW CONDUCTIVITY** — Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity — .25 btu per square foot, per hour, per degree F., per inch thick.

- **LIGHT WEIGHT** — Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

- **PERMANENT** — Does not disintegrate when wet, resists absorption. Will not shake down, is fire resistant and odorless.

- **EASY TO INSTALL** — Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall section between fasteners.

- **COMPLETE RANGE** — STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings are available.

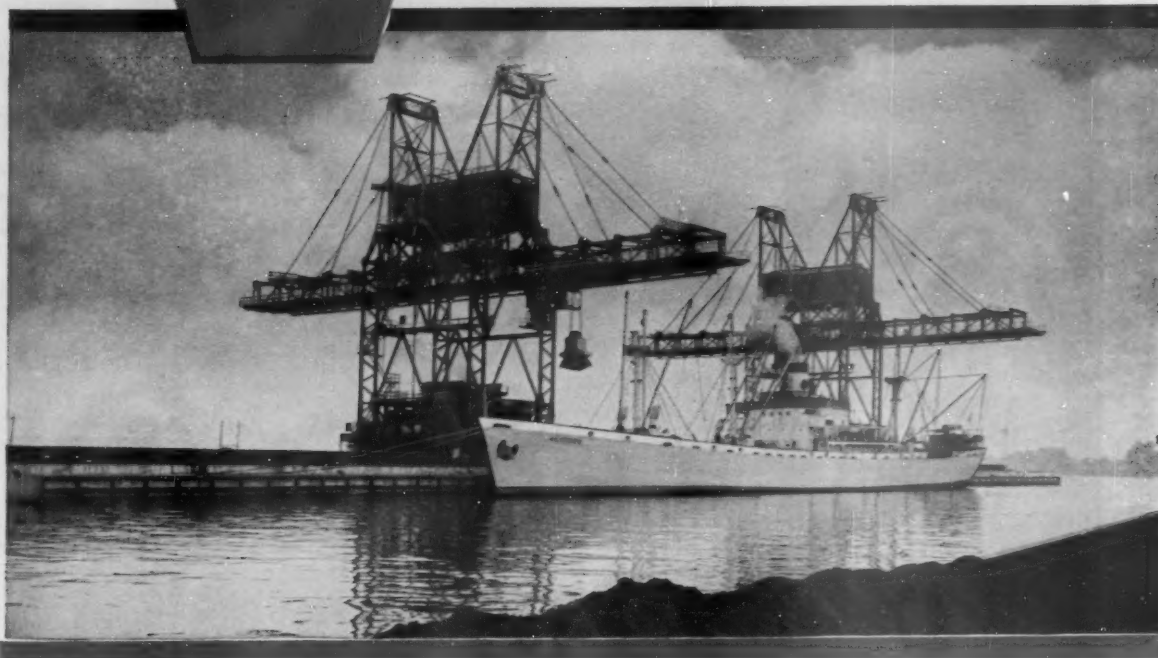
- **HIGH SALVAGE VALUE** — The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.



SETS THE STANDARD BY WHICH ALL OTHER REFRIGERATOR CAR INSULATIONS ARE JUDGED

new Pennsylvania RR pier
handles up to 3600 tons
per hour with

BROWNHOIST
ore unloaders



60 tons a minute! Seems incredible, but that's the production pace set by these two giant Industrial Brownhoist ore unloaders at the new Pennsylvania Railroad pier in Philadelphia, Pennsylvania. Towering over both pier and ocean-going ore vessels, the two enormous Brownhoist machines—each with a free-digging capacity of 1800 tons per hour—provide this ore terminal with the most modern and efficient unloading facilities in the United States. They can travel the full length of the pier and lower apron extensions from either side to obtain a reach of 72 feet from the dock. Each huge 25 ton capacity bucket rolls out, takes a bite, rolls back on the apron to drop its contents into a 100-ton receiving hopper, then rolls out for another bite. Time elapsed from bite to bite? Just 45 seconds!

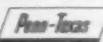
The same engineering experience that made these Brownhoist ore bridges possible has also resulted in other fine Brownhoist materials handling equipment ... locomotive cranes, wrecking cranes, car dumpers, traveling bridge cranes, buckets. If you have a heavy duty materials handling problem, it will pay you to discuss it with our engineers at Brownhoist.



BROWNHOIST MATERIALS HANDLING EQUIPMENT
GIVES A LIFT TO AMERICAN INDUSTRY

INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN • DISTRICT OFFICES: New York,
Philadelphia, Cleveland, Chicago, Denver, San Francisco, Montreal
AGENCIES: Detroit, Birmingham, Houston

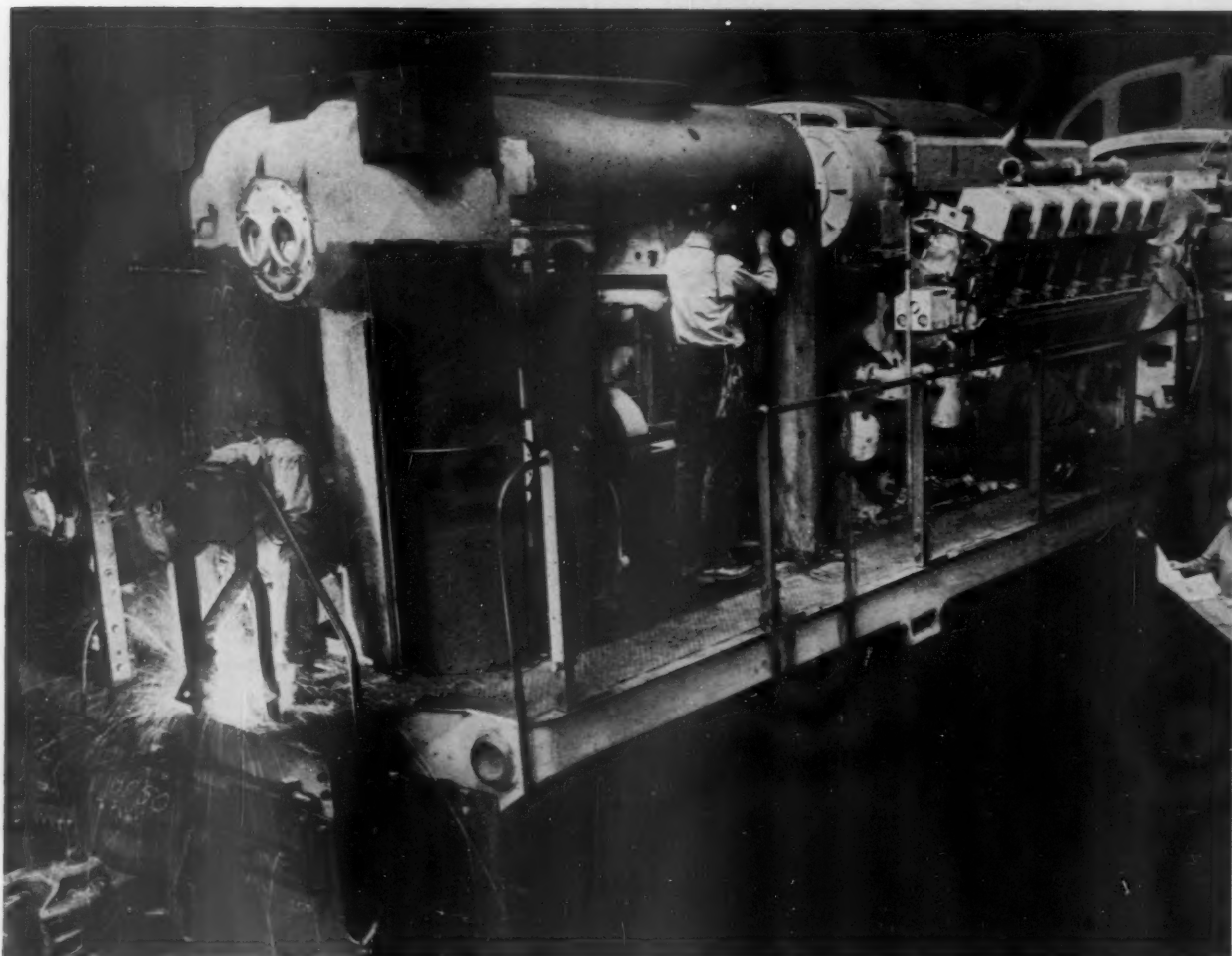
SUBSIDIARY OF



184

BROWNHOIST

ALCO modernizations offer



Long-service locomotives are rebuilt in ALCO plant. Railroads may choose complete ALCO Remanufacturing Services. Work includes all engine rebuild and modernization, as well as chassis and electrical improvements. ALCO returns your locomotives upgraded to this year's specifications for service and performance.

ALCO's Modernization Kits and Remanufacturing Services include these important items:

ALCO water-cooled turbocharger—more efficient, responds rapidly to speed and load changes, easy to maintain.

Ni-Resist exhaust manifold—reduces casting growth and failures.

High-pressure fuel injection with snubber valve—more complete fuel combustion, lube-oil condition improved, line erosion reduced.

Ni-Resist insert pistons—top-ring groove wear reduced, increases ring mileage.

Grooveless and partially grooved engine bearings—oil-film thickness and load-carrying capacity increased.

New hardened crankshafts.

Oil-bath filter—maintains high efficiency over 95 per cent, less filter maintenance, reduces engine wear.

Simplified amplidyne control system—fewer parts in system with simpler circuits, maintenance reduced.

Two-piece idler gear with inboard and outboard bearings.

***Crankshaft resurfaced by chrome-plating.**

***Serrated fit** between cap and block prevents distortion and misalignment, eliminates fretting.

***Items which are normally accomplished by ALCO's Remanufacturing Services.**

improved power at low cost

Two Methods Available for Application of Locomotive Improvements: Modernization Kits Are Installed in Railroad Shops; Remanufacturing Services Accomplished at ALCO Plant

Lower maintenance costs with improved performance on long-service ALCO locomotives can be yours when you take advantage of ALCO modernizations. New design developments in ALCO diesel engines, chassis and electrical equipment can be applied to your motive power to give you features which will upgrade your performance standards to this year's level.

Two modernization services are available at ALCO: Modernization Kits and Remanufacturing Services. You may select the method which suits your operation best, or utilize both services. In either service you get completely designed, tested and warranted equipment from the original manufacturer — ALCO.

Modernization kits include complete parts with detailed installation instructions. The kits permit complete installation of an improved, better performing system or assembly within your own shops, often during normal overhaul periods with no extra loss of operating time. At present, many railroads are applying the modernizations as a package—locomotive by locomotive. The modernizations provided by

ALCO allow your long-service locomotives to match the performance of those now coming from the production lines.

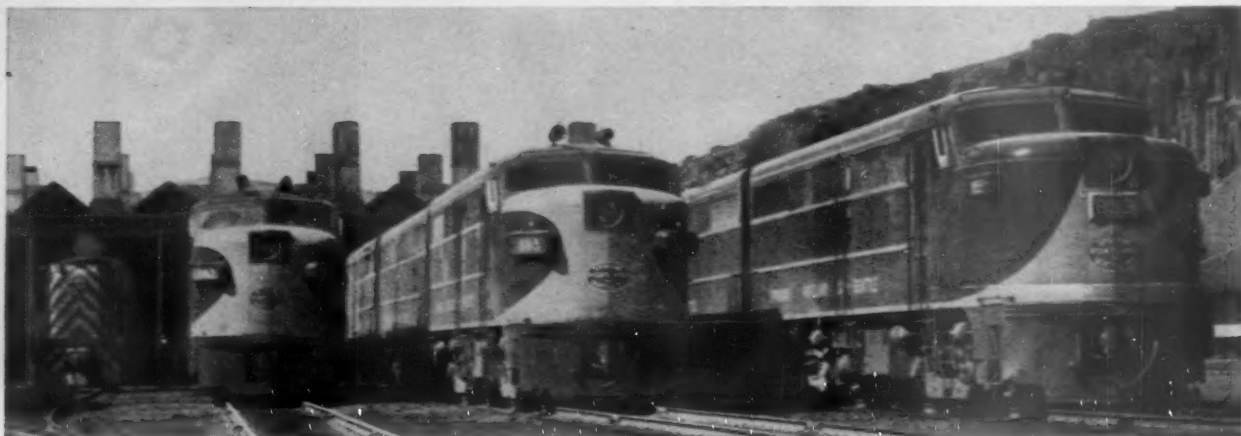
Remanufacturing Services offer complete engine and locomotive remanufacturing along with many other improvements at fully equipped ALCO plants. With extensive facilities, established manufacturing techniques and many years of locomotive experience, ALCO repair personnel provide the best in locomotive upgrading at moderate cost. For engines, this service is available on either a unit exchange or repair and return basis. In addition, all ALCO remanufacturing is warranted along with the equipment installed.

Let Modernization Kits and Remanufacturing Services benefit your ALCO locomotives, bring more power per dollar. Contact your nearest ALCO Sales Office for complete information, or write P. O. Box 1065, Schenectady 1, New York.

The ALCO logo consists of the word "ALCO" in a bold, sans-serif font, enclosed within a rectangular border.

ALCO PRODUCTS, INC.
NEW YORK

Sales Offices in Principal Cities



Spokane, Portland and Seattle Railway applied ALCO modernizations to its 34 road freight units over an 18-month period. They reported "This modernization program has resulted in more efficient utilization of these 34 road units. This program has updated the diesel engine from a 1946 model to the 1956 model by taking advantage of engineering developments over the past ten years."

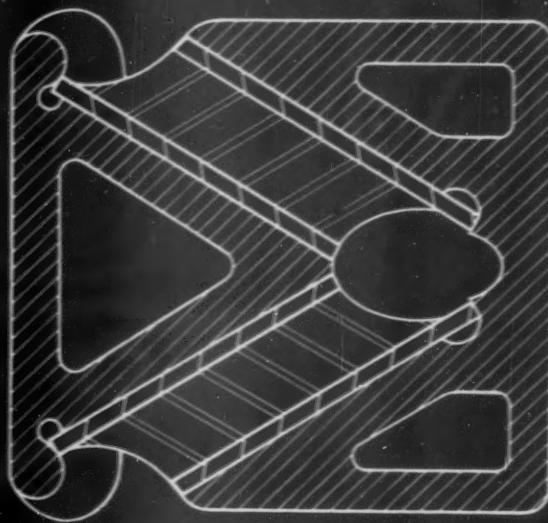
*Better Railroading with
National Specialties*



REASON:

Over 9 out of 10 diesel road locomotives are equipped with National Rubber-Cushioned Draft Gears. Since 1937, over 40,000 National rubber gears have given more than 200 billion miles of service. No other manufacturer can match this experience.

AA-5018



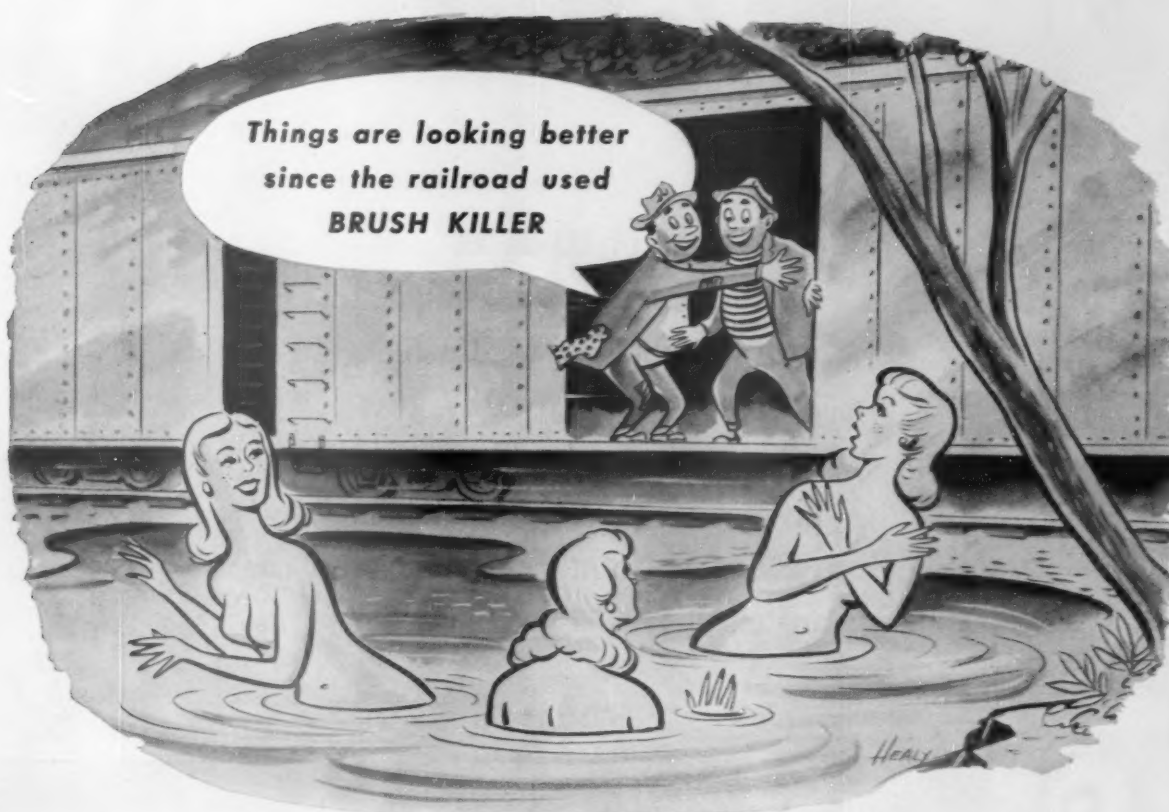
SHEAR-COMPRESSION PRINCIPLE

Ask any National representative what National's continued progress through research means to you.

NATIONAL MALLEABLE AND STEEL CASTINGS COMPANY

Cleveland 6, Ohio

COUPLERS • YOKES • DRAFT GEARS • FREIGHT TRUCKS • SNUBBER PACKAGES • JOURNAL BOXES and LIDS



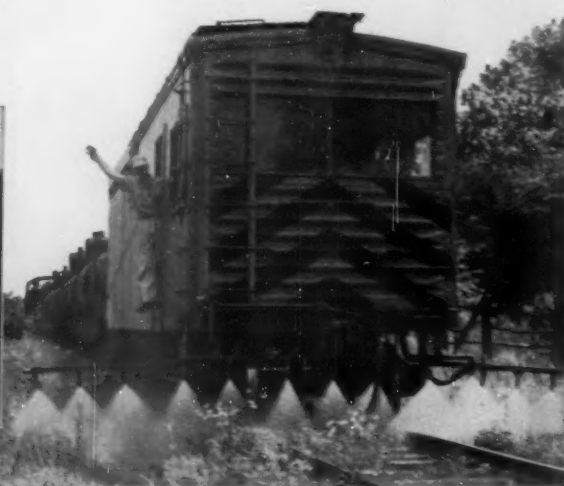
Chipman Chemical Company weed killers, brush killers and application service are backed by over 40 years of experience in serving railroads. An extensive line of weed, grass and brush killing chemicals is available to meet varying conditions. Included are the following:

Atlacide	Atlas "A" Arsenical
Chlorax	Atlas "D"
Chlorax "40" • Chlorea	Brush Killer
TCA-Chlorax	Telvar W
Methoxone-Chlorax	Borax • Dalapon

Let us solve your weed problems with the *right* chemicals and application service.

CHIPMAN
Chemical Company, Inc.
 Bound Brook, New Jersey

16 Strategically Located Chipman Plants





Laying and welding N-S-F in one of 600 new boxcars at Great Northern's St. Cloud, Minn. shops.

N-S-F* helps THE BUILD FOR THE FUTURE



Railroad inspector giving N-S-F a final check as new Great Northern boxcar rolls off the road's final assembly line at St. Cloud.

Cars equipped with NAILABLE STEEL FLOORING enable progressive railroads to furnish shippers with Class A cars for all kinds of loadings—and safer cars, too, for shippers' personnel. Moreover, N-S-F is a flooring that can make for substantial savings over the years in both original investment and maintenance costs. It is equally economical in either new or used cars.

Pertinent, timely performance and cost studies are available from N-S-F representatives in Chicago, New York, Philadelphia, St. Louis, Cleveland, San Francisco, Minneapolis and Atlanta. In Canada, N-S-F is made and sold by International Equipment Co., Ltd., Montreal.

N-S-F (TM): NAILABLE STEEL FLOORING
Made and sold by—

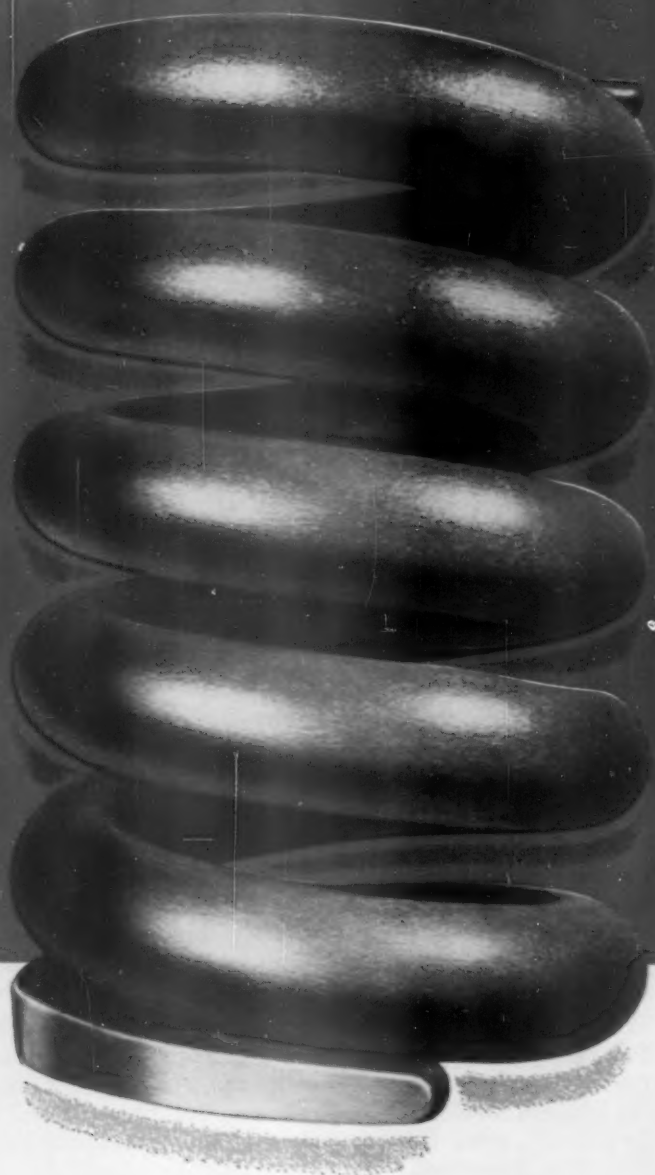
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Detroit 29, Michigan • A Unit of



NATIONAL STEEL  CORPORATION

LOOK AT



1.

Longer Service Life

All ASF Extended Life Springs are shot-peened—which cold-works surfaces and more than doubles the life of the spring.

ALL THREE

...before you specify truck springs!

2. 3.

Better Performance

A new heat-treating process makes ASF Extended Life Springs far better able to maintain load-carrying capacity—without permanent set.

Lower Cost

ASF Extended Life Springs are now available at no increase in cost over conventional springs. Because they last over twice as long, they cut your spring costs per car mile.

E-X-T-E-N-D-E-D L-I-F-E SPRINGS

A contribution to railroad progress...through research by

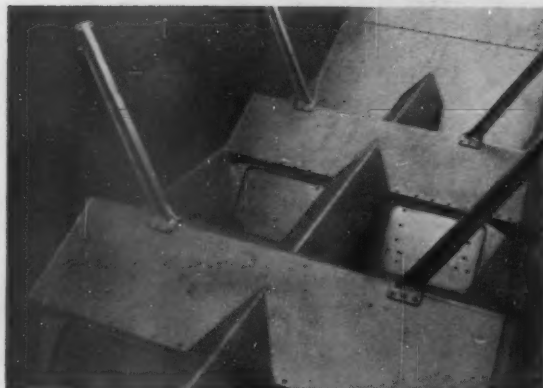
AMERICAN STEEL FOUNDRIES

Prudential Plaza, Chicago 1, Illinois

Canadian Sales: International Equipment Co., Ltd., Montreal 1, Quebec



On the Virginian coal rides on **YOLOY E**



Above—Interior view of the Virginian hopper car, showing how YOLOY E plates are welded and riveted in car construction.



Five hundred 70-ton hopper cars like this one, to be built in the Virginian shops this year, will use YOLOY E plates. These rugged cars will soon join fleets of thousands of others built of high strength steels, to haul the nation's coal from mines to market.

YOLOY E has high resistance to corrosion, abrasion and shock which results in lower maintenance and greatly lengthened life for hopper cars, box cars and other rolling stock.

The excellent forming and welding qualities of YOLOY E meet all requirements for railroad construction. More than 20 years of proven service on American railroads demonstrate every day the extra values obtained from the YOLOY Family of Steels.

THE YOLOY FAMILY

High in resistance to corrosion, shock and vibration, easy to fabricate, easy to weld.

YOLOY S
(Nickel-Copper)
High Strength Steel

YOLOY E
(Nickel-Chrome-Copper)
High Strength Low Alloy
Steel

Youngstown



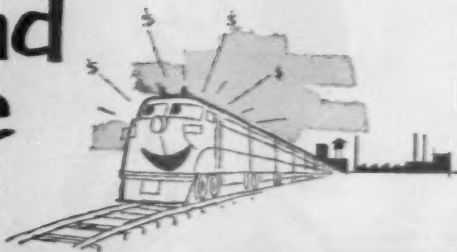
THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of
Carbon, Alloy and YOLOY Steel

General Offices Youngstown, Ohio District Sales Offices in Principal Cities.

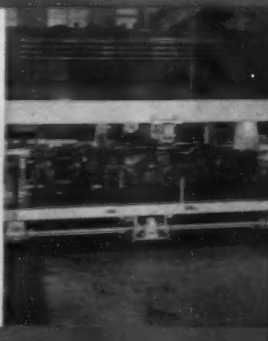
SHEETS - STRIP - PLATES - STANDARD PIPE - LINE PIPE - OIL COUNTRY TUBULAR GOODS - CONDUIT AND EMT - MECHANICAL TUBING - COLD FINISHED BARS - HOT ROLLED BARS - WIRE - HOT ROLLED RODS - COKE TIN PLATE - ELECTROLYTIC TIN PLATE - BLACK PLATE - RAILROAD TRACK SPIKES - MINE ROOF BOLTS

How a railroad can save money!



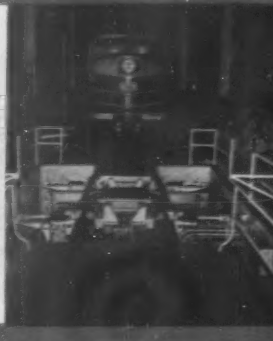
Faster, Lower Cost Truck and Wheel Changes

Whiting Drop Tables reduce lay-up time from days to hours. They save manpower on truck and wheel changes and help assure uninterrupted, profitable operation. Capacities range from 10 to 150 tons—designed to the requirements of the most modern Diesel, electric or steam shops. Write today for Bulletin DT-C-404.



Accurate, Economical Wheel Grinding

The Whiting Wheel Grinder provides a fast, accurate short-cut to restoring proper wheel contour—without removing the wheels. No need to open axle bearing housings—or to remove a single nut or bolt. Eliminates costly wheel removal, truing and replacement. Write for Bulletin MS-C-401.



Safer, Easier Lifting

Whiting Electric Portable Jacks put ton-moving muscles at your fingertips. There's a type for every need... from special lifters, to all-purpose pit jacks. Tenders, cars, switchers or locomotives... all are lifted more safely and at lower cost. Whatever your requirements—from 25 to 80 tons—get in touch with Whiting. Write for Bulletin PJC-403.



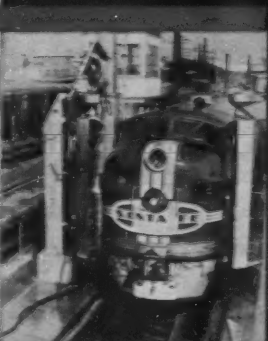
Heavy-Duty Lifting and Moving for the Big Jobs

Whiting Overhead Traveling Cranes lift and move the largest Diesels and even the heavier gas-turbine locomotives quickly and safely. They help put big engines back on the road in record time. There is a Whiting Crane for every requirement... a complete range of types and sizes. Write for Bulletin 80.



Gleaming Washes in Minutes

From locomotive to dome-type cars... just one operator and a Whiting Train Washer sends an entire train on its way in minutes... clean and bright. Cars may pass through a Whiting Washer at the rate of 70 feet per minute. An ordinarily hard-to-clean dome-type car is shining in as little as 75 seconds. Save washing time—cut washing cost, write for Bulletin CW-C-409.



Time-Saving Cross-Over Transport

Whiting Cross-Over Bridges permit fast, easy transport from platform to platform over railroad tracks. They eliminate time-consuming routing around tracks to crossings, and there is no interference with railroad traffic. Complete, uninterrupted movement is possible over the rails and on them. Write for Bulletin MS-C-400.



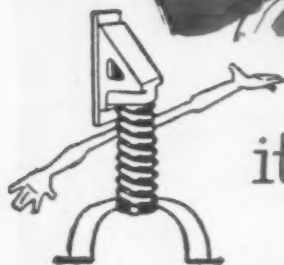
Whiting railroad equipment makes possible big savings in repair and maintenance. Shop time is turned into road time! More locomotives and cars will be out on the road—working. Get complete information on one or all of these Whiting products. Send for the bulletins listed above.

WHITING CORPORATION

15603 Lathrop Avenue • Harvey, Illinois



**EQUIPMENT
FOR RAILROADS**



it's Barber Stabilized trucks **AT BOTH ENDS!**

THE MECHANICAL DEPARTMENT

...wants easy dismantling for various servicing operations, *fast* re-assembling, *low* labor costs. Barber Stabilized Trucks... simple in design and efficient... provide these advantages.



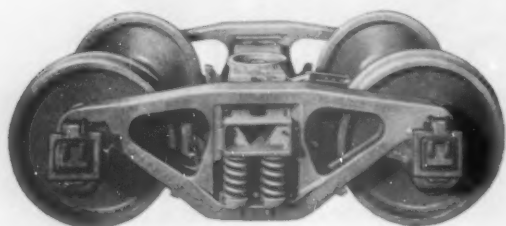
THE TRANSPORTATION DEPARTMENT

...wants smooth, easy rides for valuable cargoes — lowered damage claims. Transportation men want to cooperate, too, with mechanical men who *know* how Barber Stabilized Trucks save in maintenance costs. So they agree!

Specify Smoother-Riding

BARBER

STABILIZED TRUCKS



Standard Car Truck Company, 332 S. Michigan Ave., Chicago 4, Illinois. *In Canada:* Consolidated Equipment Co., Ltd., Montreal 2.

Memo to Railroad Executives:

**"For
purely
selfish
reasons..."**



Jake Stewart is vice president of Commander-Larabee Milling Company. Commander-Larabee is the 8th largest milling company in the United States.

Congratulations on your improved service!"



Unretouched Photograph

What The FREIGHT-LINER SYSTEM Is and Does!

Freight-Liner 810 can be applied anywhere in any kind of weather to upgrade cars quickly. First a coat of Freight-Liner Resin 810 is sprayed on floor or wall areas. Next, Freight-Liner Fiberglass Reinforcing Material is applied. A second coat of Freight-Liner Resin 810 impregnates the fiberglass which dries quickly to a smooth seal. Cars are ready for use in three to six hours.

People at Commander-Larabee Milling Company agree that the railroad industry should be congratulated on its new method of upgrading cars with Freight-Liner 810.

During the past year, Commander-Larabee cooperated with the Kansas City Southern Railway in a series of tests. Cars upgraded with Freight-Liner 810 were used in shipping bulk grain, sacked flour and feed.

"As a shipper using more than 100,000 cars a year, we were pleased with the new Freight-Liner System. This was reflected both in car availabilities and in the excellent car condition apparent in all comparative tests," said Jake Stewart.

"Reports on test cars show that losses were cut to a minimum when cracks and broken linings were spot-patched with Freight-Liner 810.

"Freight-Liner cars were easy to clean and sanitize and bulk shipments came through in excellent condition. Claims on torn bags and other losses in the test shipments were way below average. Frankly, we'd be tickled pink if all our shipments could go in cars upgraded with Freight-Liner," he added.



**Archer-
Daniels-
Midland
company**



700 Investors Building, Minneapolis, Minnesota

CLASSIFIED ADVERTISEMENTS

FOR SALE railway equipment

Used—As Is—Reconditioned
RAILWAY CARS | **LOCOMOTIVES**
All Types | Diesel, Steam, Gasoline,
Diesel-Electric

special offerings

- 5 FLAT CARS, 50-Ton Capacity, 42' long and 9'4" wide
- 30 ALL-STEEL ORE CARS, HOPPER TYPE 40- AND 50-TON CAPACITY—Excellent Condition
- 30 Cupola Type, Steel Underframe CABOOSE CARS Cast Steel Trucks

IMMEDIATE DELIVERY

Service-tested® | Freight Car Repair Parts
For All Types of Cars | **IRON & STEEL PRODUCTS, INC.**
"ANYTHING containing IRON or STEEL"

General 13486 So. Brainard Ave. | New York 50-c Church Street
Office Chicago 33, Illinois | Office New York 7, New York
Phone: Mitchell 6-1212 | Phone: Bkeman 3-8230

REVENUE ACCOUNTING OFFICER AND ASSISTANT

Midwestern railroad desires experienced personnel to fill the following vacancies:

Assistant Comptroller in charge of Revenue and Car Accounting Departments.

Assistant to above officer with experience in revenue accounting, rate, and divisions work.

Prefer applicants with college degrees. Age 25 to 35. Excellent pension, life insurance, and hospitalization benefits.

Your reply will be held confidential. Address Box 1156, RAILWAY AGE, 79 West Monroe Street, Chicago 3, Illinois.

POSITION WANTED

Gen. Supt. short line R.R. available in 60 to 90 days. 23 years experience Class I and short line R.R. Steam and Diesel, also M of W and transportation. Address Box 811, RAILWAY AGE, 30 Church St., New York 7, N.Y.

HELP WANTED

OPENINGS for an Assistant Engineer and an Instrumentman with the Engineering Department of the Soo Line Railroad located at Stevens Point, Wisconsin. Reply in detail to Mr. J. P. Gannon, Division Engineer, Soo Line R.R., Stevens Point, Wisconsin.

Advertisers

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FOR SALE RECONDITIONED RAILROAD CARS FOR INTERPLANT USE GONDOLAS • BOX • FLAT

ERMAN-HOWELL DIVISION

332 South Michigan Avenue
Chicago 4, Illinois
WEbster 9-0500

KEEP
BUYING
U. S.
SAVINGS
BONDS



STUCKI SIDE BEARINGS All Rolled Steel

A. STUCKI CO.

Oliver Bldg., Pittsburgh, Pa.

Canadian Representative: The Holden Co. Ltd.

Montreal, Canada

MORE RAILROADIANA AT BARGAIN PRICES

We still have a small amount of material to dispose of from our library. Included are bound July issues of the Official Railway Guide for 1949-1955, inclusive, at \$5 each postpaid.

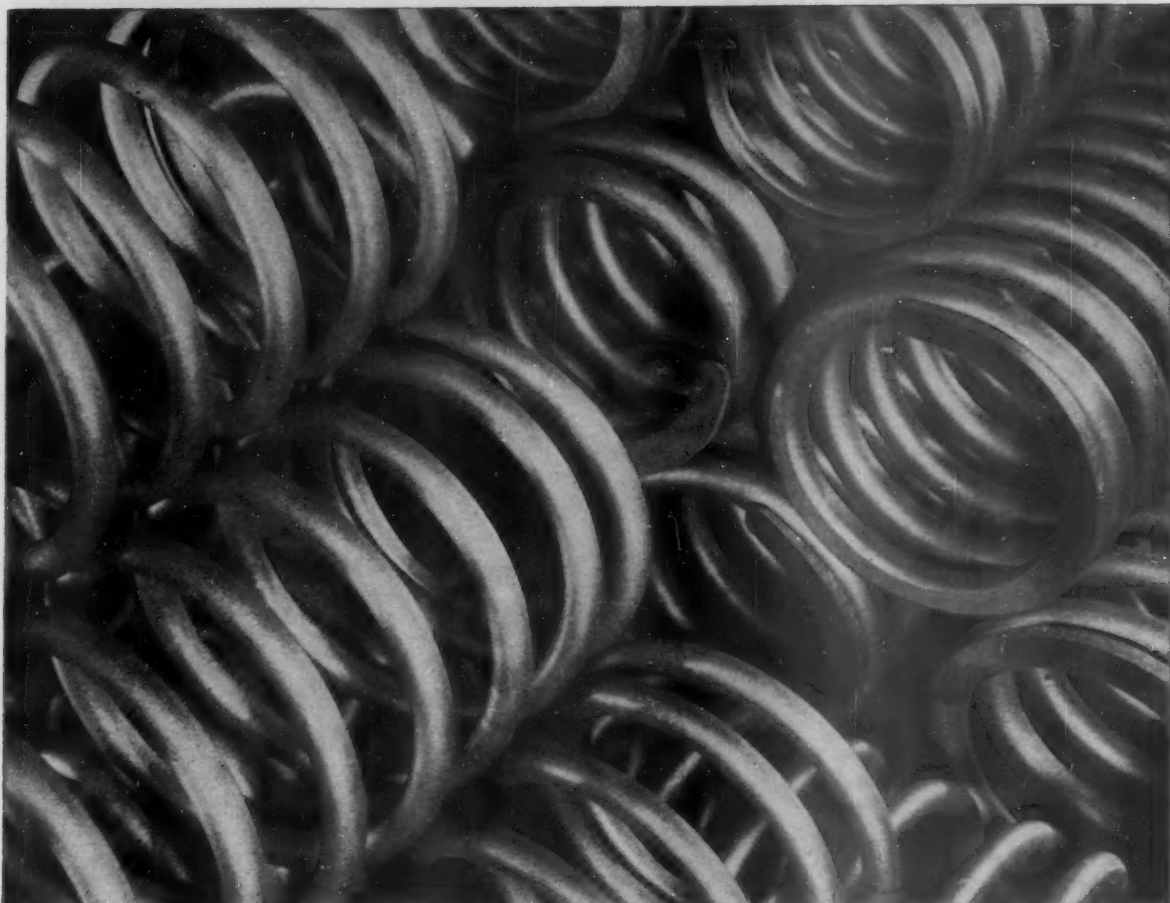
Annual reports of a number of railroads, dating from the late 1890's through the early 1940's; almost all bound. Prices vary. Write for complete list. Examples: Atlantic Coast Line, 1896-1907; 1908-1914; 1915-1922; 1923-1935, \$10. Great Northern, 1907-1913; 1914-1921; 1922-1934, \$7.50. Southern Railway, 1906-1913; 1914-1923, \$5.

Bound volumes of Railway Age, various years, 1937-1953, \$5 per volume, express collect. 1937-1951, bound editorial pages only, two volumes per year; 1952-1953, bound editorial and advertising pages, four volumes per year.

Rush requests to:

Library, Railway Age,

30 Church Street, New York 7, N.Y.



Crucible fatigue-resistant springs

mean longer, better performance

Crucible *fatigue resistant* springs bring you a performance-bonus. They are made to last many times longer because they're shot peened.

Whether you specify single or double heat treated Crucible *fatigue resistant* springs, shot peening provides a better surface condition...and imposes a negative stress on the surface to offset positive stresses set up in service. It adds up to optimum performance—maximum spring life.

And Crucible, *the nation's leading producer of special purpose steels*, controls the manufacture of springs from ore to finished product. Inspections are continuous, and may include a final Magnaflux, if desired—all designed to bring you a better spring at low cost. For more details, write *Spring Division, Crucible Steel Company of America, McCandless Avenue, Pittsburgh 1, Pa.*

CRUCIBLE spring division

Crucible Steel Company of America

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SUPERIOR

... supplier of

FARLOW DRAFT GEAR ATTACHMENT REPAIR PARTS

Price list available on check plates, following blocks, yoke fillers, spring spacers, back stops.

Engineered electric steel castings to 30,000 pounds ... certified malleable iron castings to 300 pounds.

Send for details on Superior's complete engineering stress analysis, product development, machining and welding services.

YOUR BEST SOURCE FOR CAR AND LOCOMOTIVE CASTINGS in steel and malleable iron.

40 years of service
to the railroad industry.

SUPERIOR STEEL AND MALLEABLE CASTINGS CO.

Graham Avenue, Benton Harbor, Michigan

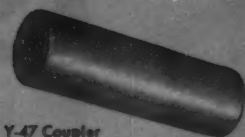
Safer
**High Speed
 Freight Service
 with
 new, improved**

**Here's why you should specify
 Symington-Gould Type F Interlocking Couplers**

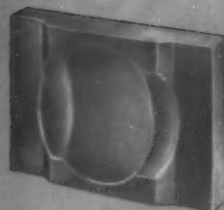
- Interlocking feature prevents vertical slipovers and serves to keep cars in alignment, preventing climbing or overturning in event of derailment
- Reduction of free slack
- Threefold anti-creep protection
- Easier operation
- Couples with any existing standard A.A.R. Coupler
- Safety shelf on F Coupler is designed to support mated coupler in event of pull-out
- Increased service life
- Increased strength
- Lower maintenance cost with Type F Coupler contours holding gage longer because of restricted vertical movement and reduced free slack

Symington-Gould

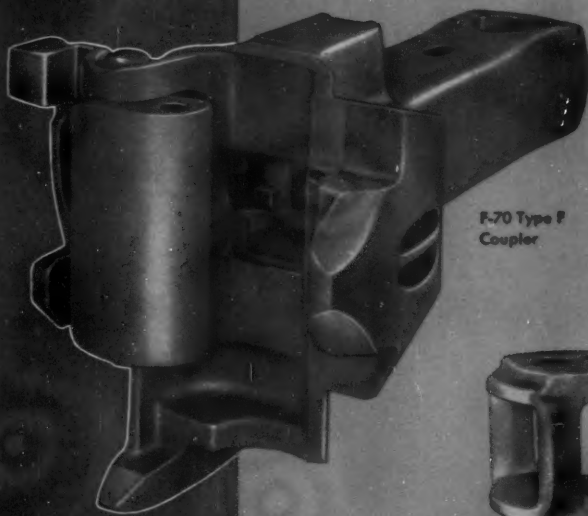
**TYPE F
 INTERLOCKING
 COUPLERS**



Y-47 Coupler
 and Yoke Pin



Y-46 Front
 Follower



F-70 Type F
 Coupler



Y-37 Yoke for
 Twin Draft Gear



Y-45 Yoke
 Standard Pocket



THE SYMINGTON-GOULD CORPORATION

Works: DEPEW, NEW YORK

New York • Chicago • St. Louis • Boston • San Francisco • In Canada: ADANAC SUPPLIES, LTD., Montreal, Que.



You can't tell the difference?

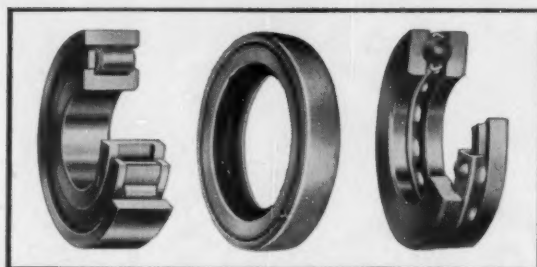
Take a substitute anti-friction bearing. Probably looks exactly like a Caterpillar part. But remember, there are many different bearings that fit a shaft and bore, yet only *one* may be right for maximum performance—the one designed especially for the machine—the one tested, specified and supplied by Caterpillar.

The same with seals. While seals may look alike, the material can vary in tensile strength, resiliency and hardness. CAT* lip-type seals meet *special* standards that assure the long-life reputation of Caterpillar machines. They are *matched* to the parts they protect. They're *right* for their particular job.

Why take chances with substitute parts? You're sure of finest quality and *maximum* life with Caterpillar parts!

And remember, your Caterpillar Dealer will carry your inventory of Cat original parts. Ask his Parts Representative about it.

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.



Each Cat anti-friction bearing and lip-type seal has been proved best for its particular application. Each one is assigned a Caterpillar part number — used only for that part in that application. Can you be sure with so-called "will-fits" and "look-alikes"?

CATERPILLAR*

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